PIONEER®

Solid state AM/FM STEREO RECEIVER

MODEL **SX-1500T(F)**

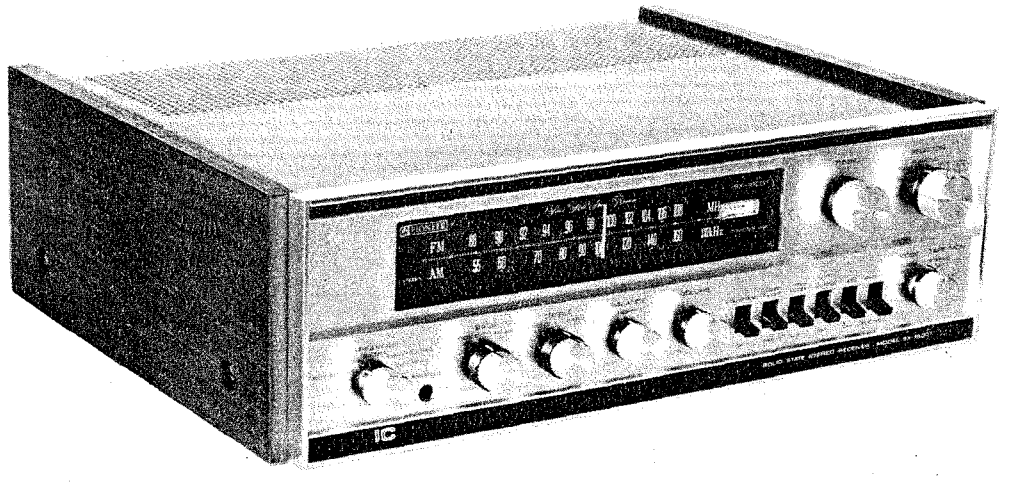
MODEL **SX-1500T**

CAUTION

Before connecting the line cord to the wall socket, carefully read and follow the instructions shown below, to assure the safety of your unit.

1. This receiver is available with two models undels like names; SX-1500T(F) and SX-1500T. Model SX-1500T(F) has a line-voltage selector provision which conditions the unit for any of five line-voltage operations; 240V, 220V, 130V, 117V, and 110V. Model SX-1500T operates only on 117V line voltage.
2. Model SX-1500T(F) is set to 240V operation when shipped. If this unit is used in a different line-voltage area, read and follow "LINE VOLTAGE SELECTION AND FUSE" on page 1. Be sure that the line voltage setting on your unit agrees with the line voltage in your area and that the fuse installed in your unit is a proper one.

OPERATING INSTRUCTIONS



PIONEER ELECTRONIC CORPORATION

PIONEER

SOME UNIQUE FEATURES:

●FM front-end employing a field effect transistor to hear more stations more clearly

By the use of FET (field effect transistor) in the FM radio frequency amplifier stage, design of nearly perfect FM front-end was achieved—free from cross modulation, free from drift, with better sensitivity, lower inherent noise, and high spurious rejection ratio.

●Integrated circuit (IC) employed in FM tuner assures outstanding capture ratio with high reliability.

In the FM intermediate frequency amplifier stage, integrated circuits are employed, resulting in an entirely different outstanding performance from that of IF stages hitherto designed, especially in the limiter characteristic and the capture ratio.

●Multiplex circuitry (MPX) for maximum channel separation

The accurate electronic switching circuitry is employed in the FM multiplex demodulator, insuring maximum separation with excellent tonal quality.

●Unique muting circuit permits the easiest tuning control

The muting circuit provided in the FM tuner completely eliminates the FM inter-station noise which has hitherto been annoying the user in tuning.

●High performance single ended push-pull (SEPP) output stage eliminates audio transformers and provides large output with true frequency fidelity

The power amplifier employs the high-performance single ended push-pull circuitry in the output stage and the push-pull complementary circuitry in the driver stage, completely eliminating the distortion inherent transformers from the audio stage. Tripple diffused mesa transistors are adopted as the power transistors in the output stage for full-fidelity frequency response with large audio output power and least harmonic distortion.

●Full complement of inputs and outputs

The inputs and outputs provided in the receiver include two pairs of PHONO MAG inputs. When two turntables are connected to these inputs, the user is able to switch from one turntable to the other any time at will. Also, two pairs of loudspeaker outputs are included for switching between, or for permitting the simultaneous use of, two loudspeakers.

●Electronic switch fully protects the precious power transistors

The electronic switching circuitry employed in the power supply completely protects expensive power transistors even when the loudspeaker leads are shorted while the receiver unit is in use.

INSTALLATION

Remember that the SX-1500 T is a transistorized receiver. Desirable places to install the SX-1500 T are:

- ●Places airy and free from humidity and dust. Avoid installing on close, low-ceiling shelves.
- ●Places not directly exposed to the sun ray.
- ●Places not close to heat-emitting objects such as heaters and stoves.
- ●Places where there is as little vibration as possible and where the surface is level.

The optimum stereophonic listening position is across the room from the speakers, somewhere close to the midpoint between the right and left speaker systems.

LINE VOLTAGE SELECTION AND FUSE

Switching Line Voltage Setting and Fuse

In order to remove the fuse, turn the fuse cap located on the line voltage selector switch in the direction indicated by an arrow. Then remove the fuse plug from the unit. Put the fuse plug back so that the proper line voltage marking can be seen thru the cut on the edge of the plug.

Whenever the set position of the selector switch is changed, check the rating of the fuse. A 1.5-ampere fuse is to be used for either 220 V or 240 V operation and a 3-ampere fuse for any of 110 V, 117 V, or 130 V operation. If the rating of the fuse is proper, install the fuse on the fuse cap.

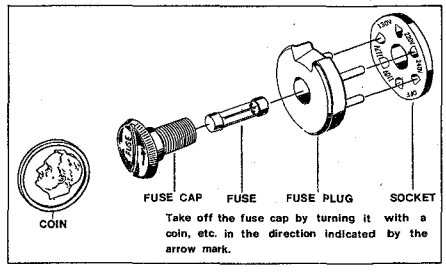

FUSE CAP
FUSE
FUSE PLUG
SOCKET
COIN
Take off the fuse cap by turning it with a coin, etc. in the direction indicated by the arrow mark.

Fig. 1

●Replacing of Fuse

When the fuse is blown off, remove the fuse cap and replace the fuse with a new one.

17. MODE/TAPE MON. SWITCH

This switch is the selector for stereo/mono and tape monitor settings. Its positions are as follows:

- MODE positions (for playback of recerds or reception of broadcasts)
  - STEREO .....For reproduction of stereo program.
  - LEFT .....For reproduction through both left and right channel loudspeakers of program material being fed to any of left channel inputs.
  - RIGHT .....For reproduction through both left and right channel loudspeakers of program material being fed to any of right channel inputs.
- TAPE MON positions (for playback of tapes or for monitoring of tape being recorded).
  - STEREO .....For stereo reproduction or stereo monitoring of recorded tapes.
  - LEFT .....For mono reproduction of only left channel of recorded tape.
  - RIGHT .....For mono reproduction of only right channel of recorded tape.

Functions of the rear panel controls terminals and inputs.

18. AM FERRITE LOOPSTICK ANTENNA

This is a loopstick antenna for the reception of AM stations. In areas relatively close to the AM station, this antenna will provide satisfactory reception. This antenna has directional properties, so it should be moved about while listening to a station and set at the position providing the best reception.

19. SEPARATION CONTROL

This control adjusts the channel separation of FM multiplex stereo broadcasts. It has already been adjusted at the factory, and normally there should be no need for any further adjustment.

20. AC OUTLET

This is an AC outlet that provides a convenient source of power for any associated equipment. It has a maximum capacity of 115VA.

21. AC OUTLET

This is another AC outlet and has a maximum capacity of 230 VA. This outlet is not controlled through the SPEAKERS switch (1) and remains live at all times.

22. AM ANTENNA TERMINAL

This is the terminal for connection with the AM antenna (mediumwave broadcasts).

23. GND 1

When using a ground lead for the receiver, it should be connected to this terminal.

24. FM ANTENNA TERMINALS

These are the terminals for connection with the FM antenna.

25. TAPE HD

When driving program material signals directly from the heads of a tape player, the output cables should be connected to these input jacks.

26. PHONO 1

When using a turntable that is equipped with a magnetic cartridge, the output cables should be connected to these input jacks.

27. PHONO 2

When using two turntables which are equipped with a magnetic cartridge, the output cables of the second turntable should be connected to these input jacks.

28. GND 2

If a turntable equipped with a ground lead is used, the ground lead should also be connected to this terminal.

29. PHONO CER

When using a turntable which is equipped with a ceramic or crystal cartridge, the output cables should be connected to these input jacks.

30. AUX

These are input jacks for auxiliary inputs such as the audio signal from a TV set.

31. TAPE MON

The outputs of the LINE OUTPUTS (the monitor output or playback output) of the tape recorder should be connected to these input jacks.

32. TAPE REC

The LINE INPUTS (the inputs or AUX inputs for recording) of the tape recorder should be connected to these recording output jacks.

33. Tape REC/P.B. CONNECTOR (DIN type)

If your tape recorder is provided with the DIN-type record/playback connector and also you have a connecting cord with DIN-type connectors, the tape recorder can be connected with this unit for both recording and playback by simply connecting the cord between the recorder and this unit.

34. LINE VOLTAGE SELECTOR AND FUSE (only applicable to Model SX-1500T℗)

The line voltage selector and fuse are assembled into one unit. For instruction on change of line-voltage setting or on fuse replacement, see "LINE VOLTAGE SELECTION AND FUSE" on page 1.

NOTE: Model SX-1500T does not have the line-voltage selector but has only the fuse holder with fuse, because it is designed for 117V operation only. When fuse needs to be replaced, use a 3-ampere fuse.

35. LINE CORD

This is the AC power cord. The AC plug provided at one end of this cord is inserted into the adjacent wall socket.

36. MAIN LOUDSPEAKER TERMINALS (RIGHT CHANNEL)

The right channel main loudspeaker leads are connected to these terminals.

37. MAIN LOUDSPEAKER TERMIALS (LEFT CHANNEL)

The left channel main loudspeaker leads are connected to these terminals.

38. EXTRA LOUDSPEAKER TERMINALS (RIGHT CHANNEL)

The right channel extra loudspeaker leads are connected to these terminals.

39. EXTRA LOUDSPEAKER TERMINALS (LEFT CHANNEL)

The left channel extra loudspeaker leads are connected to these terminals.

Antenna and Ground Connections

AM antenna

●The ferrite loopstick antenna (18) mounted on the rear of the receiver will provide satisfactory reception of local stations with strong signals. Because the loopstick antenna has directive properties, its direction may be adjusted for the best reception while listening to a station.

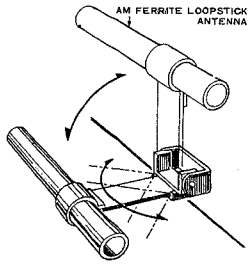


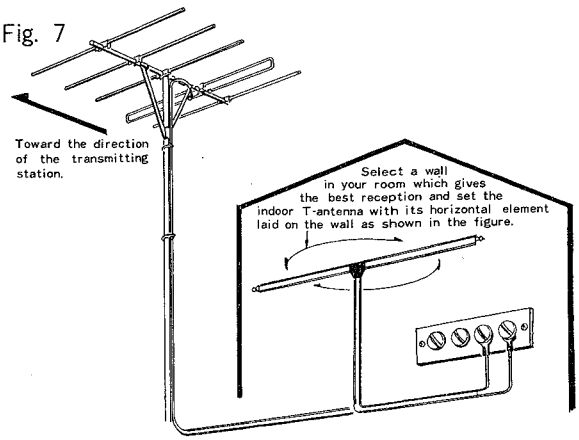
Fig. 6

●If noise is strong in your area and the adjustment of the loopstick antenna direction does not improve the situation, the furnished AM lead antenna may be laid on the wall or on other standing object as high as possible, and one end of the antenna lead should be connected to the AM antenna terminal (22). If the furnished antenna dose not help, an outdoor AM antenna may need to be set up. In this case, the antenna lead should also be connected to the AM antenna terminal (22).

FM Antenna

●If the receiver is situated in regions close to the transmitting site or is placed in a wooden building, the furnished simple indoor T-shaped antenna will provide satisfactory results. In this case, the 2 wires of the twin leads from the antenna should be connected to the FM antenna terminals (24) and the horizontal element of the T-section should be extended and positioned for the best reception while listening to an FM station. Then, the antenna should be secured to the wall or to any support.

Fig. 7


Toward the direction of the transmitting station.
Select a wall in your room which gives the best reception and set the indoor T-antenna with its horizontal element laid on the wall as shown in the figure.

●In regions where the furnished indoor T-shaped antenna provides poor results such as many noises or poor channel separation, an outdoor FM antenna may be required. In this case, the leads from the outdoor antenna should also be connected to the FM antenna terminals (24).

For information about the outdoor FM antenna, consult a TV shop in your area.

●Ground

In some area, the use of a proper ground reduces noise significantly. The lead from an appropriate grounding electrode such as a water pipe or a ground rod, is connected to GROUND TERMINAL (23).

Loudspeaker Connections

●Two loudspeaker systems, the main and the extra, (the left and right channel loudspeakers per system or four loudspeakers in total) may be connected to the receiver. Note, however, that the impedance of each channel loudspeaker must be larger than four ohms when two loudspeaker systems are connected to the receiver Model SX-1500T℗ /SX-1500T.

●As shown in Fig. 8, the loudspeaker leads are connected to the speaker plug furnished with this receiver. In this case, be sure that the positive loudspeaker lead is connected to the positive terminal on the plug with reference to Fig. 8.

Connection for installation of one loudspeaker system

1. The speaker plug connected to the leads from the right channel loudspeaker is inserted into its mating socket (MAIN LOUDSPEAKER TERMINALS—RIGHT CHANNEL (36).

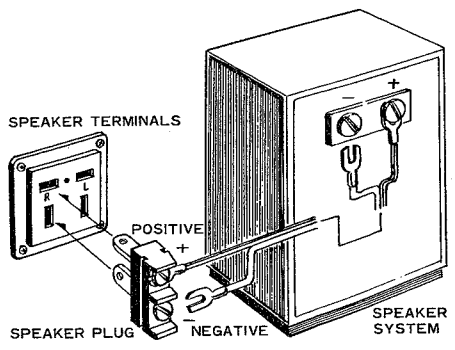


Fig. 8

2. The speaker plug connected to the leads from the left channel loudspeaker is inserted into its mating socket (MAIN LOUDSPEAKER TERMINALS–LEFT CHANNEL (37).

Connection for installation of two loudspeaker systems

1. The first loudspeaker system is connected to the MAIN LOUDSPEAKER TERMINALS (36) and (37) as described in the preceding paragraph.
2. The second loudspeaker system is connected to the EXTRA LOUDSPEAKER TERMINALS (38) and (39) in the similar manner described in the preceding paragraph; the right channel loudspeaker is connected to the terminals (38) and the left channel loudspeaker to the terminals (39).

Tape player or tape deck connections

The output leads from the tape player or deck which is not equipped with the playback preamplifier (equalizer) are connected to the TAPE HD input jacks (25). The upper input jack is for the left channel and the lower is for the right channel. When a monaural tape deck is used, its output lead may be connected either to the upper input jack or to the lower input jack.

Turntable connections

Two record players with a magnetic type pickup cartridge and one record player with either a ceramic or a crystal type cartridge may be connected to this receiver at a time, and an optional record player can be selected for operation.

Magnetic pickup turntable connections

1. When using a turntable equipped with a magnetic type pickup cartridge, the output leads should be connected to the PHONO 1 input jacks (26). The upper input jack is for the left channel and the lower is for the right channel. When a monaural turntable is used, it does not matter which of the two inputs the output cable is connected to.
2. When two turntables are used, the first set is connected to the PHONO 1 input jacks as described herein above, and the second set is likewise connected to the PHONO 2 input jacks (27).

Ceramic/crystal pickup turntable connections

When using a turntable equipped with either a ceramic or a crystal pickup cartridge, the output leads are connected to the PHONO CER input jacks (29). The upper input jack is for the left channel and the lower is for the right channel. When a monaural turntable is used, the output cable may be connected to either the upper input jack or the lower.

Tape recorder connections

For making recordings

The signals of the program material to be recorded are taken from the TAPE REC output jacks (32) and are connected to the LINE INPUTS of the tape recorder. The upper jack is for the left channel and the lower jack is for the right channel. When using a monaural tape recorder, the signal may be derived from either of the two output jacks.

- The signals available at the TAPE REC output jacks (32) are not controlled by any of the controls of the receiver Model SX-1500TⓅ /SX-1500T namely, VOLUME (10), BASS (7), and TREBLE (8). Therefore, adjustment of the recording level must be made with the controls of the tape recorder.

Tape playback and tape monitor connections

The program material to be reproduced through the receiver is derived from the LINE OUTPUTS (the playback outputs or the MONITOR outputs) of the tape recorder and is connected to the TAPE MON input jacks (31) of the receiver. The upper input jack is for the left channel and the lower jack is for the right channel. When using a monaural tape recorder, its output cable is connected to either of the two input jacks of the receiver.

- The program signal fed to the TAPE MON input jacks (31) can be controlled by the controls of the receiver Model SX-1500TⓅ /SX-1500T such as VOLUME, BASS, and TREBLE.

Use of REC/P.B. DIN-type connector

If your tape recorder is provided with the DIN-type record/playback connector and you have a connecting cord with DIN connectors, you can connect the tape recorder with this unit for both recording and playback simply by connection of the cord between the recorder and this unit. In this case, there is no need of connecting the tape recorder to either TAPE REC output jacks (32) for recording or TAPE MON input jacks (31) for playback.

Operation of Controls and Switches

Reception of FM Broadcasts

1. Whether you plan to listen to FM-monaural or FM stereo broadcasts, first set the SELECTOR switch (5) to the FM-AUTO position, and the MODE/TAPE MON SWITCH(17)to the MODE-STEREO position.
   - ●The Model SX-1500 T Ⓕ /SX-1500 T is equipped with an FM mono/stereo automatic switching circuit which serves to identify an FM signal automatically as either a mono or a stereo signal. Monaural signals are reproduced in mono, and stereo signals are automaically reproduced in stereo. When a stereo signal is received and reproduced, the stereo indicator light will go on.
2. The MUTING switch (14) is set to the MUTING position. If, however, the receiving signal is weak in your area, leave this switch in the OFF position.
3. Set the AFC switch (15) to the OFF position, and then tune in a desired station with the TUNING CONTROL (4) while observing the TUNING INDICATOR (3) for pinpoint accuracy in tuning.
4. After the desired station has been tuned in accurately, the AFC switch is set to the AFC position to activate the automatic frequency control circuit.

NOTES: 1. With the SELECTOR(5) set to the FM-AUTO position, if an extremely weak stereo broadcast is received, the receiver will automatically switch to mono operation.
2. If you wish to reproduce FM stereo broadcasts in mono, or if there is excessive noise with the SELECTOR (5) set to the FM-AUTO position and tonal quality is impaired, set the SELECTOR (5) to the FM-MONO position. In this case, the MODE/TAPE MON switch (17) may be set to either MODE-LEFT or MODE-RIGHT.

Reception of AM Broadcasts

1. The SELECTOR switch(5)is set to the AM position. The MODE/TAPE MON switch (17) may be set to any of MODE-STEREO, MODE-LEFT, or MODE-RIGHT.
2. The desired station is tuned in by means of the TUNING control (4) while observing the TUNING INDICATOR (3).

Record Reproduction

1. The SELECTOR switch (5) is set to the PHONO position.
2. For reproducing the turntable outputs fed to the PHONO 1 input jacks (26), the PHONO switch (16) is set to the PHONO 1 position, and for reproducing the turntable outputs fed to the PHONO 2 input jacks (27), the switch (16) is set to the PHONO 2 position.
   - ●When using a turntable equipped with either ceramic pickup type cartridge or crystal pickup type cartridge, the setting of the PHONO switch (16) can be set to any position.
3. The MODE/TAPE MON switch (17) is now set to the MODE-STEREO position. However, when using a monaural turntable, it should be set to either the MODE-LEFT or MODE-RIGHT position, depending upon which channel input the output cable of the turntable is connected to.

Direct reproduction of tape head outputs

●When the signal directly derived from the playback head of a tape deck is reproduced through this receiver, the operation will be as follows:

1. The SELECTOR switch (5) is set to either the TAPE HD 7 1/2 or TAPE HD 3 3/4 position, depending upon the speed at which the tape is to be played back.
2. The MODE/TAPE MON switch (17) is now set to the MODE-STEREO position. However, when a monaural tape deck is used, it should be set to either the MODE-LEFT or MODE-RIGHT position depending upon which of the two input channels the output cable from the tape deck is connected to.

Note: For playback of a mono material using a stereo tape deck, the MODE/TAPE MON switch (17) should be set to either the MODE-LEFT or MODE-RIGHT position, depending upon which track the material is recorded on.

Recording and Playback Using Tape Recorder

●Recording

1. The signals of the program being reproduced through the loud speakers are always present at the TAPE REC output jacks (32). Therefore, the SELECTOR switch (5) and MODE/TAPE MON switch (17) are appropriately set to select an optional program source in the normal manner for reproduction through the loudspeakers. Then, the signals from the TAPE REC output jacks (32) can be recorded on the tape recorder.

Note: The VOLUME, BASS, and TREBLE controls of the Model SX-1500TⒻ /SX-1500T do not affect the sounds being recorded. The recording level should be adjusted with the level controls of the tape recorder.

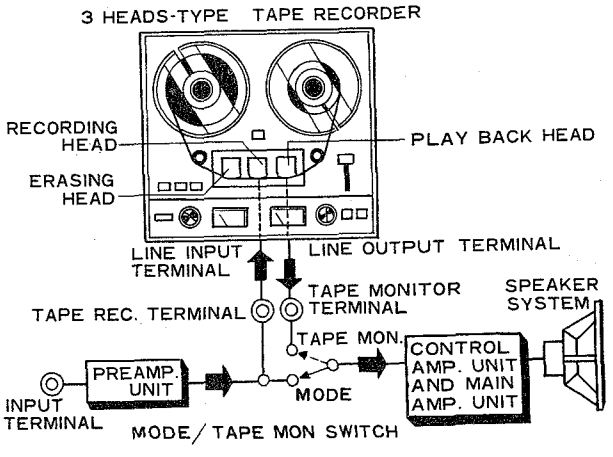
●Playback

1. For stereo playback, the MODE/TAPE MON switch (17) is set to the TAPE MON-STEREO position. For playback of mono material using a monaural or stereo tape recorder, the MODE/TAPE MON switch (17) may be set to either the TAPE MON-LEFT or TAPE MON-RIGET position.

●Tape Monitoring

When using a 2-or 3-head tape recorder equipped with a monitor circuit, by making all connections for recording and playback, it will be possible to monitor the recording in progess by moving the MODE/TAPE MON switch (17) from the MODE-STEREO position to the TAPE MON-STEREO position. In the case of a 2-head tape recorder, the signal being fed to the recording head will be monitored, and in the cass of a 3-head tape recorder, the signals recorded on the tape will immediately be monitored by the playback head picking up the recorded signals.

Fig. 9



CONDITIONS FREQUENTLY MISTAKEN TO TROUBLES

Noise: There are a variety of noises relating to the operation of a hi-fi unit. These are generally divided into two types; (1) the unit is sick (a transistor or part is deteriorated) and (2) an external source of noise is giving noise to the unit.
When a hi-fi unit produces an unpleasant noise, it is frequently judged that the unit is sick, but a statistical record indicates that the majority of noises produced in a hi-fi acoustic unit is resulted from external sources of noise. Due to the inherent high sensitivity and also the high fidelity in reproduction, the unit amplifies and reproduces the high extraneous noises, however small. If your receiver produces a noise, check the following table and trace out the source of noise for an appropriate corrective action.
The table includes the conditions that may be mistaken to the troubles of the unit.

	Symptoms	Suspected Source of Noise	Diagonosis and Corrective Action
When Listening to Broadcasts	Continuous or intermittent noise like jjjjjj or zzzzzz.	●Statics or listening. ●Flourescent lamp, motor, or thermostat may be used in house or in the vicinity of the house.	In many cases, it is very difficult to remove the source of noise. In order to increase the radio input larger than the noise level, set up a good outdoor antenna and make a complete grounding.
	When a station is tuned in, hum is mixed in the program.	●Poor fluorescent lamp, motor, or electric heater may be used in house or near the house.	Reversing the line plug may occasionally alleviate this noise problem. Usually it is very difficult to eliminate the noise.
	Hissing sound noise in AM (medium wave) reception.	●The frequency of an adjacent station is interfering that of the station being tuned in (10 Hz beat interference). ●TV set is on in the same house with receiver.	Not possible to remove such interference. If the cause of such noise is in the TV set, increase the distance between the TV set and receiver.
	Static noise in FM reception (in particular, when automobiles run close to the house).	●White noises generated from automobile engines. ●Radio frequency sewing machine or welding machine being used near your house.	In an area surrounded by hills or high buildings, the FM input signals are very weak. Thus the noise limiter in the circuit looses its function. Set up an outdoor FM antenna having many reflector elements.
When Playing Records	Reception of FM stereo program contains more noise than FM mono program.	●Note that the service area covered by an FM stereo broadcast is about 50 % of that of a regular mono broadcast.	Increasing FM input signal may alleviate this problem. Use an exclusive FM outdoor antenna instead of the indoor T-antenna.
	Hum or buzz. When switched to radio reception, the noise will disappear.	●Poor connection of shielded wire (a). ●Jack connection is loose. (b) ●Line cord or fluorescent lamp is near the shielded wire. (c) ●Poor grounding. (d) ●HAM transmitting station or TV transmitting station is near your house. (e)	Correct the conditions stated in (a), (b), (c), or (d). In case of (e), report it to an official activity.
	Output sound is poor and mixed with noise. Highs are not clear.	●Stylus is worn out. (a) ●Record is worn out. (b) ●Dust is adhered to stylus. (c) ●Improper mounting of stylus. (d) ●Stylus pressure is not proper. (e) ●The TREBLE sound level is too high.	Check into (a) through (e) and correct the condition. Lower the TREBLE level. Lower the TREBLE level.

●Further, watch the following conditions: These are also mistaken to troubles.

	Symptoms	Suspected Place	Diagonosis and Corrective Action
	Power is not turned on although the power switch is set to ON.	●Fuse is blown off. (a) ●Line plug is loose. (b)	**Check (a) throught(b) and correct the condition.**
	In playing a record, increasing the volume will cause howling.	●Distance between the record player and the speaker is too small. ●The place on which the record player or speakers can not stably rest.	Change the distance or rearrange the installation positions of the unit and speakers. (Installing the record player on a firm, solid stand may alleviate this problem.) Do not enhance the BASS sound level excessively.

ALIGNMENT OF THE SX-1500TⒻ /SX-1500T

Alignment of AM Section

Position of Switch : SELECTOR·····AM
Volume Control Setting : Fully Counterclockwise

STEPS	Input			Dial Setting	Output Equipment & Coupling	Alignment	
	Epuipment & Coupling	Freq.	Level			Adjust	Remarks
1	Sweep Generator TP_{503}	455KHz	80 dB	Point of no interference as near as 535 KHz	Oscilloscope OUT	T_{505}	Adjust to get maximum sensitivity and symmetry
2	〃 TP_{502}	〃	60 dB	〃	〃	T_{504} T_{505}	〃
3	〃 TP_{501}	〃	50 dB	〃	〃	T_{503} T_{504} T_{505}	〃
4	Signal Generator ---- Antenna terminal through dummy	600KHz	70 dB (400 Hz 30%)	600 KHz	AC VTVM OUT	T_{502}	Adjust to get maximum defleection
5	〃	1,400KHz	〃	1,400 KHz	〃	CT_3	〃
6	Repeat STEPS 4 and 5 several times						
7	〃	600KHz	30 dB	600 KHz		T_{501} Ferrite Antenna (Adjusting core)	〃
8	〃	1,400KHz	〃	1,400 KHz	〃	CT_1 CT_2	〃
9	Repeat STEPS 7 and 8 several times						

Alignment of MPX Section

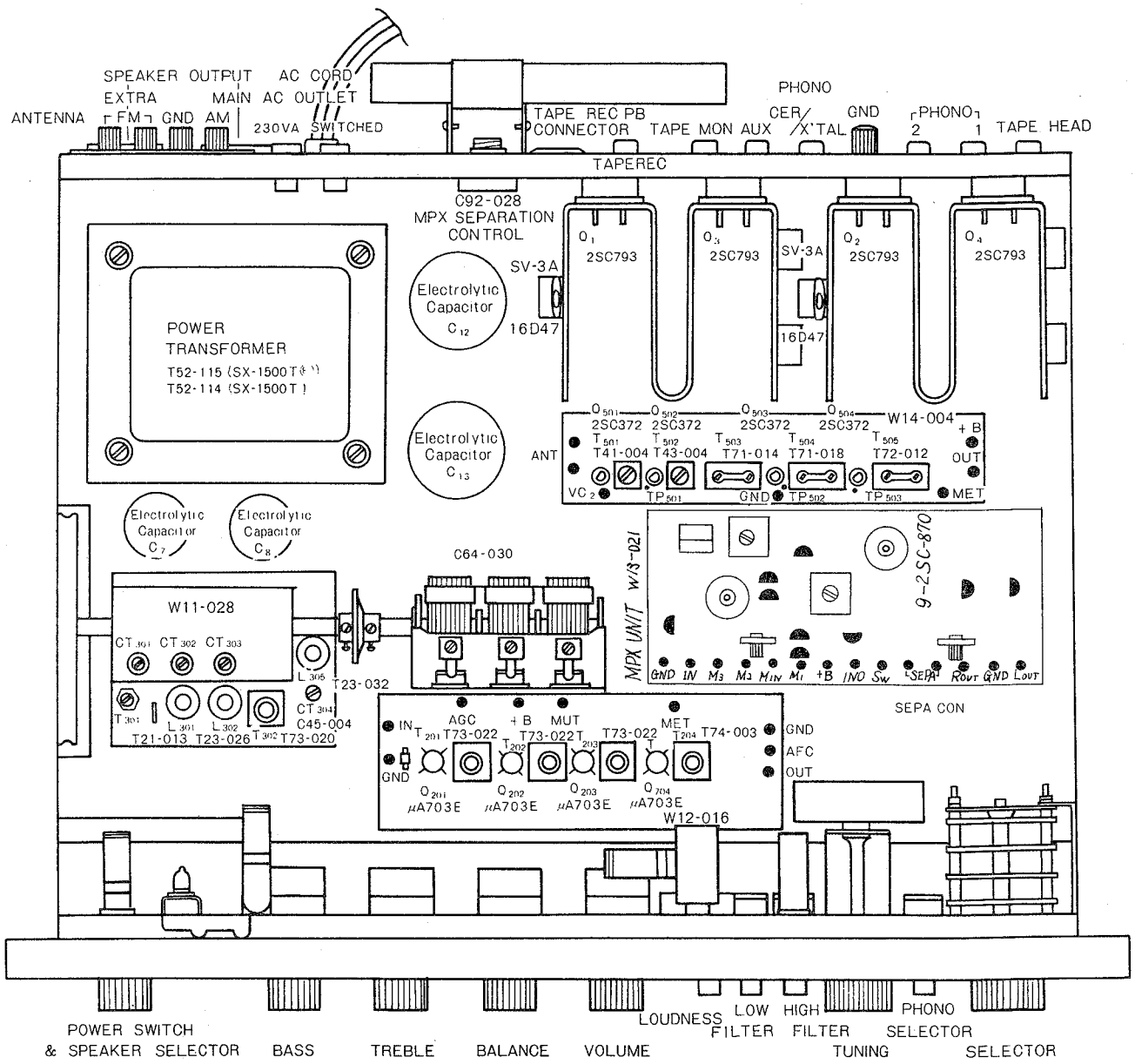
Position of Switch : SELECTOR·····FM AUTO
AFC·····OFF
MUTING·····OFF
Volume Control Setting : Fully Counterclockwise
Input Signal : Main(L+R) 40.5KHz Deviation(60%) 19KHz Pilot 7.5KHz Deviation(10%)

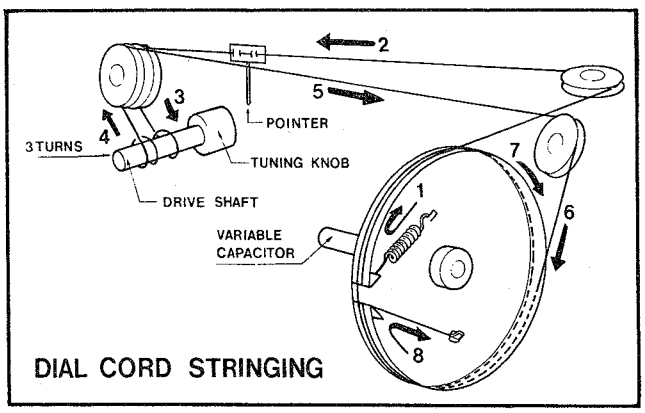
STEPS	Circuite to be adjusted	Signal Generator Input		Connect VTVM	Alignment	
		Coupling	Input Signal		Adjust	Remarks
1	SCA Filter	Audio Oscilletor to IN	66 KHz 170 mV	AC VTVM TP_{703}	L_{704}	Adjust to get minimum deflection
2	〃	〃	68 KHz 170mV	〃	L_{705}	〃
3	19 KHz Stage	MPX Generator to FM Antenna terminal	Main (L+R)	DC VTVM TP_{702}	L_{701} L_{702}	Position of VR_{702}···MAX Adjust to get minimum deflection
4	38 KHz Stage	〃	Sub (L−R)	AC VTVM L_{OUT} or R_{OUT}	L_{703}	Adjust to get maximum deflection
5	Separation Control	〃	L	AC VTVM R_{OUT}	VR_7	Position of VR_{701}··Central Point Adjust to get minimum diflection
6	〃	〃	R	AC VTVM L_{OUT}	〃	〃
7	〃	〃	Main (L+R)	L_{OUT} R_{OUT}	VR_{701}	Adjust to less than 1 dB in the defference of each output
8	Repeat STEPS 5.6 and 7 several times					
9	Stereo indicator light	〃	〃 18 dB		VR_{702}	Adjust to light stereo indicator lamp when MPX signalis applied

Alignment of FM Section

Disconnect output terminal of front-end(1.2) from IN terminal of IFunit
Position of Switch: SELECTOR·····FM MONO
AFC·····OFF
Volume Control Setting : Fully **Counter clockwise**

STEPS	Input			Dial Setting	Output Equipment & Coupling	Alignment	
	Equipment & Coupling	Freq.	Level			Adjust	Remarks
1	Sweep Generator IN	10.7 MHz	40 dB		Oscilloscope MET	T_{201} T_{202} T_{203}	Adjust to get maximum Sensitiinty and symmetry
2	〃 〃	〃	80 dB		〃		Check gymmetry of curve
3	Remove electrolytic capacitor C_{217}(5μF) in detector circuit						
4	〃 〃	〃	40 dB		Oscilloscope OUT	T_{204}	Adjust primary side of T_{204}, so that incline of straight part of "S" curve will be steepest, adjust secondary side so that center of "S" curve will coincide with center of marker
5	Connect output terminal of front-end(1, 2) to IN terminal of IF unit						
6	〃 TP of Front-end	〃	40 dB	Point of no interference as near as 88 MHz	〃 MET	Top of T_{302} T_{201} T_{202} T_{203}	Adjust to get maximum sensitivity and symmetry
7	〃 〃	〃	80 dB	〃	〃		Check symmetry of curve
8	〃 〃	〃	40 dB	〃	〃 OUT	T_{204}	Adjust similarly STEPS 4
9	Connet electrolytic capacitor C_{217}(5μF)						
10	Signal Generator FM Antenna terminal	90 MHz	20 dB (400Hz, 30%)	90 MHz	Oscilloscope VTVM OUT	L_{303}	Adjust to get maximum deflection
11	〃 〃	106MHz	〃 〃	106 MHz	〃 〃	CT_{301}	〃
12	Pepeat STEPS 10 and 11 several times						
13	〃 〃	90MHz	〃 〃	90M Hz	〃 〃	T_{301} L_{301} L_{302}	〃
14	〃 〃	106MHz	〃 〃	106 MHz	〃 〃	CT_{302} CT_{303}	〃
15	Repeat STEPS 13 and 14 several times						


SPEAKER OUTPUT
EXTRA
MAIN
AC CORD
AC OUTLET
ANTENNA
FM
GND
AM
230VA SWITCHED
TAPE REC PB CONNECTOR
TAPE MON
AUX
PHONO CER/X'TAL
GND
PHONO 2
1
TAPE HEAD
TAPEREC
C92-028
MPX SEPARATION CONTROL
SV-3A
16D47
Electrolytic Capacitor C12
Electrolytic Capacitor C13
Electrolytic Capacitor C7
Electrolytic Capacitor C8
POWER TRANSFORMER
T52-115 (SX-1500T)
T52-114 (SX-1500T)
Q1 2SC793
Q3 2SC793
Q2 2SC793
Q4 2SC793
Q501 2SC372
Q502 2SC372
Q503 2SC372
Q504 2SC372
W14-004
T501 T41-004
T502 T43-004
T503 T71-014
T504 T71-018
T505 T72-012
ANT
VC2
TP501
GND
TP502
TP503
MET
+B
OUT
C64-030
W11-028
CT301 CT302 CT303
L305
T23-032
T301
L301
L302
T302
CT304
C45-004
T21-013 T23-026 T73-020
MPX UNIT W13-021
9-2SC-870
GND IN M3 M2 MIN M1 +B INO SW SEPA ROUT GND LOUT
SEPA CON
IN
AGC
+B
MUT
MET
T201 T73-022
T202 T73-022
T203 T73-022
T204 T74-003
GND
AFC
OUT
Q201 μA703E
Q202 μA703E
Q203 μA703E
Q704 μA703E
W12-016
POWER SWITCH & SPEAKER SELECTOR
BASS
TREBLE
BALANCE
VOLUME
LOUDNESS
LOW FILTER
HIGH FILTER
TUNING
PHONO SELECTOR
SELECTOR


2
3
4
5
POINTER
3TURNS
TUNING KNOB
DRIVE SHAFT
VARIABLE CAPACITOR
1
6
7
8
DIAL CORD STRINGING

PARTS LIST OF THE SX-1500T(F)/SX-1500T

CAPACITORS

INμF, 10% TOLERANCE UNLESS OTHERWISE NOTED P:$\mu\mu$F

Symbol	Description				Part No.
C_1	ceramic	180P		50V	
C_2	〃	〃		〃	
C_3	mylar	0.03		〃	
C_4	〃	〃		〃	
C_5	〃	0.2		〃	
C_6	〃	〃		〃	
C_7	electrolytic	1000		〃	
C_8	〃	〃		〃	
C_9	〃	0.47	±20%	25V	
C_{10}	ceramic	22 P		50V	
C_{11}	styrol	2000P		〃	
C_{12}	electrolytic	1000		100V	
C_{13}	〃	〃		〃	
C_{14}	Ceramic	0.01			C43-003-0
C_{15}	〃	〃			C43-003-0
C_{16}	〃	〃			〃
VC_1	AM variable capacitor				C64-030-0

Note: For SX-1500T only; 1) Change the part number for C14 Ceramic 0.01 μF to C15-001-0. 2) Delete C16.

RESISTORS

IN OHM, 10% TOLERANCE 1/4 WATT UNLESS OTHERWISE K:KΩ M:MΩ

Symbol	Description				Part No.
R_1	Carbon film	68K			
R_2	〃	〃			
R_3	〃	1M			
R_4	〃	〃			
R_5	〃	100K			
R_6	〃	〃			
R_7	〃	68K			
R_8	〃	3.3K			
R_9	Compound part				W52-004-0
R_{10}					
R_{11}					
R_{12}					
R_{13}	Carbon film	150K			
R_{14}	〃	〃			
R_{15}	〃	15K			
R_{16}	〃	〃			
R_{17}	〃	12K			
R_{18}	〃	〃			
R_{19}	〃	47K			
R_{20}	〃	〃			
R_{21}	〃	〃			
R_{22}	〃	〃			
R_{23}	〃	100		½W	
R_{24}	〃	〃		〃	
R_{25}	〃	〃		〃	
R_{26}	〃	〃		〃	
R_{27}	Wire wound	0.7	8%	5W	
R_{28}	〃	〃	〃	〃	
R_{29}	〃	〃	〃	〃	
R_{30}	〃	〃	〃	〃	
R_{31}	〃	〃	〃	〃	
R_{32}	〃	〃	〃	〃	
R_{33}	Carbon film	150		3W	
R_{34}	〃	〃		〃	
R_{35}	〃	20K		½W	
R_{36}	〃	560		2W	
R_{39}	〃	47K			
R_{40}	Wire wound	330		2W	
R_{41}	〃	〃		〃	
R_{44}	Corbon film	1M		½W	

Note: For SX-1500T only; Add. R38 Composition 2.2 MΩ 1/2W.

DIODES AND TRANSISTORS

Symbol	Description	Part No.
D_1	SV-3A Diode	
D_2	〃	
Q_1	2SC793 Transistor	
Q_2	〃	
Q_3	〃	
Q_4	〃	
Th_1	16D-47 Thermistor	
Th_2	〃	

COILS AND TRANSFORMER

Symbol	Description	Part No.
	Powertransformer (SX-1500T(F))	T52-115-0
	AM Ferriteroopstick Antenna coil	T42-014-A
L_1	Heater chork coil	T42-025-A
L_2	〃	〃

Note: For SX-1500T only; Change the part number for power transformer to T52-114-0.

SWITCHES

Symbol	Description	Part No.
S_1	Input Selector	S16-037-C
S_2	Mode Selector	S16-038-B
S_3	Output Selector	S11-020-0
S_4	Toggle Switch	S42-001-C
S_5	〃	〃
S_6	〃	〃
S_7	〃	〃
S_8	〃	〃
S_9	〃	〃

Note: For SX-1500T only; Change the part number for S3 (Output Selector) to S11-019.

COMPOUND PART

Symbol	Description	Part No.
	TAPE REC. terminal	W52-004-0

POTENTIOMETERS

Symbol	Description	Part No.
VR_1	250K dual Volume	C82-038-0
VR_2	100K dual	C87-018-0
VR_3	〃	〃
VR_4	50K dual Balance	C85-052-0
VR_5	300Ω Current Control	C92-037-0
VR_6	〃	
VR_7	10K MPX Separation Control	C92-028-0

MISCELLANEOUS

Description	Part No.
FM Front end	W11-028-0
FM IF unit	W12-020-0
MPX unit	W13-021-D
AM Tuner unit	W14-004-C
Pre amp unit	W15-005-D
Control amp unit	W15-031-B
Main amp unit	W15-027-A

P. T. F. unit	W15-010-A
Power Supply unit	W16-010-0
Front Panel	M21-228-A
Metal case	M33-105-D
Side Board (Left)	M64-077-D
Side Board (Right)	M64-076-D
Foot	M61-003-0
Screw, to fix metal case	B11-021-A
Dial Pully (for tuning capacitor)	M42-027-0
Dial Pully	M42-009-A
Dial Spring	E31-066-A
Dial Scale	A33-050-A
Dial Pointer	A31-080-A
Bracket	A59-030-0
Tuning Meter	A91-007-0
Pilot Lamp 6.3V 250mA	E22-013-0
6.3V 150mA	E22-006-0
Pilot lamp for FM stereo	E22-011-A
3A Fuse	E21-006-0
1.5A Fuse	E21-012-0
Pilot lamp socket	K42-003-0
LINE VOLTAGE SELECTOR	S11-018-0
Head phone jack	K72-006-A
Connector 5p for Tape Recorder	K93-003-B
A. C. concent	K82-007-B
Concent for Speaker	K73-003-A
Power Transistor Socket	K31-018-0
Knob, Tuning	A12-095-A
Knob, Selector	A12-098-A
Knob, Volume, Mode, Balance, Output Selector	A12-100-A
Knob, Bass, Treble (L)	A12-103-B
Knob, Bass, Treble (R)	A13-011-A

Note: For SX-1500T only; Delete Line Voltage Selector and add Fuse Holder K96-006-C. change the part nunober for Front Panel to M21-219-0

FM FRONT-END UNIT (W11-028-0)

CAPACITORS

Symbol	Description				Part No.
C_{301}	Ceramic	1000P	+100% −0	25V	
C_{303}	〃	5P	±0.25P	50V	
C_{304}	〃	1000P	+200% −0	500V	C47-005-A
C_{305}	〃	〃	〃	〃	〃
C_{306}	〃	10P	±0.5P	50V	
C_{307}	〃	5P	〃	〃	
C_{308}	〃	〃	〃	〃	
C_{309}	〃	〃	〃	〃	
C_{310}	〃	100P		500V	C47-004-0
C_{311}	〃	1P		〃	
C_{312}	〃	1000P	+200% −0	〃	C47-005-A
C_{313}	〃	0.01	+100% −0	25V	
C_{314}	〃	1000P	+200% −0	500V	C47-005-A
C_{315}	〃	5P	±0.5P	50V	
C_{316}	〃	〃	〃	〃	
C_{317}	〃	7P	〃	〃	
C_{318}	〃	1000P	+200% −0	500V	C47-005-A
C_{319}	〃	〃	〃	〃	〃
C_{320}	〃	〃	〃	〃	〃
CV_{301}	4 gang air variable capacitor				C64-036-0
CV_{302}					
CV_{303}					
CV_{304}					
CT_{304}	Cylinder trimmer				C45-004-B

RESISTORS

Symbol	Description				Part No.
R_{301}	Carbon film	100K		1/8W	
R_{302}	〃	1M		〃	
R_{303}	〃	220Ω		〃	
R_{304}	〃	3.9K		1/8W	
R_{305}	〃	22K		〃	
R_{306}	〃	1K		〃	
R_{307}	〃	220Ω		〃	
R_{308}	〃	8.2K		〃	
R_{309}	〃	2.2K		〃	
R_{310}	〃	1.5K		〃	
R_{311}	〃	22K		〃	
R_{312}	〃	〃		〃	
R_{313}	〃	3.3K		〃	

COILS AND TRANSFORMER

Symbol	Description	Part No.
T_{301}	FM ANT coil	T22-013-0
T_{302}	FM IF Transformers	T73-020-0
L_{301}	RF coil	T21-013-0
L_{302}	〃	T23-026-C
L_{303}	RF Choke coil	T24-028-0
L_{304}	〃	〃
L_{305}	OSC coil	T23-032-0

DIODES AND TRANSISTORS

Symbol	Description	Part No.
Q_{301}	3SK22 FET	
Q_{302}	2SC461Ⓑ Transistor	
Q_{303}	2SC461Ⓐ Transistor	
D_{301}	1S85 Variable Capacitor Diode	

FM IF· UNIT (W12-020)

CAPACITORS

Symbol	Description				Part No.
C_{201}	Ceramic	0.01	+100% −0	25V	
C_{202}	〃	〃	〃	〃	
C_{203}	〃	〃	〃	〃	
C_{204}	〃	〃	〃	〃	
C_{205}	〃	10P	〃	50V	
C_{206}	Mylar	0.1	±20%	〃	
C_{207}	Ceramic	0.01	+100% −0	25V	
C_{208}	〃	〃		〃	
C_{209}	〃	〃		〃	
C_{210}	〃	〃		〃	
C_{211}	Mylar	0.1	±20%	50V	
C_{212}	Ceramic	3P	±0.25P	〃	
C_{213}	〃	0.01	+100% −0	25V	
C_{214}	〃	100P		50V	
C_{215}	〃	0.01	+100% −0 %	25V	
C_{216}	〃	〃		〃	
C_{217}	〃	300P		50V	
C_{218}	Electrolytic	0.47	±20%	25V	
C_{219}	〃	5		10V	

RESISTORS

Symbol	Description				Part No.
R_{201}	Carbon film	470			
R_{202}	〃	56K			
R_{203}	〃	470			
R_{204}	〃	56K			
R_{205}	〃	10K			
R_{206}	〃	2.2K			
R_{207}	〃	6.8K			
R_{208}	〃	100			
R_{209}	〃	220K			
R_{210}	〃	220			
R_{211}	〃	820			

DIODES AND TRANSISTORS

Symbol	Description	Part No.
D_{201}	IN60 diode	
D_{202}	〃	
D_{203}	〃	
D_{204}	〃	
D_{205}	〃	
D_{206}	〃	
Q_{201}	μA703EI.C	
Q_{202}	〃	
Q_{203}	〃	
Q_{204}	〃	

COIL AND TRANSFORMERS

Symbol	Description	Part No.
L_{201}	RF choke coil	T24-029-0
T_{201}	IF Transformer	T73-022-0
T_{202}	〃	〃
T_{203}	〃	〃
T_{204}	〃	T74-003-0

CONPOUND PART

Symbol	Description	Part No.
W_{201}	Descriminator	W53-040-0

FM MPX. UNIT (W13-021)

CAPACITORS

Symbol	Description				Part No.
C_{701}	Electrolytic	2.2		10V	C51-022-0
C_{702}	Mylar	0.02		50V	
C_{703}	Ceramic	68P			
C_{704}	Styrol	0.02	±5%		
C_{705}	Electrolytic	10		10V	
C_{706}	Styrol	0.005	±5%	50V	
C_{707}	〃	〃			
C_{708}	〃	〃			
C_{709}	Electrolytic	4.7	±20%	15V	
C_{710}	〃	〃			
C_{711}	〃	0.47		25V	
C_{712}	〃	〃			
C_{713}	〃	33		10V	
C_{714}	Styrol	0.005	±5%	50V	
C_{715}	〃	0.0033			
C_{716}	Electrolytic	22		10V	
C_{717}	〃	10			
C_{718}	〃	〃			
C_{719}	Styrol	0.015	±5%	50V	
C_{720}	Electrolytic	1		10V	
C_{721}	〃	22		25V	
C_{724}	Ceramic	0.04	+100% −0	50V	

RESISTORS

Symbol	Description				Part No.
R_{701}	Carbon film	100K		1/8W	
R_{702}	〃	1K		〃	
R_{703}	〃	47K		〃	
R_{704}	〃	68K		〃	
R_{705}	〃	220		〃	
R_{706}	〃	1K		〃	
R_{707}	〃	4.7K		〃	
R_{709}	〃	100K		〃	
R_{710}	〃	47K		〃	
R_{711}	〃	〃		〃	
R_{712}	〃	12K		〃	
R_{713}	〃	3.3K		〃	
R_{714}	〃	56K		〃	
R_{715}	〃	〃		〃	
R_{716}	〃	100		〃	
R_{717}	〃	10K	5%	〃	
R_{718}	〃	12K		〃	
R_{719}	〃	〃		〃	
R_{720}	〃	0K		〃	
R_{721}	〃	100K		〃	
R_{722}	〃	〃		〃	
R_{723}	〃	330K		〃	
R_{724}	〃	〃		〃	
R_{725}	〃	47K		〃	
R_{726}	〃	〃		〃	
R_{727}	〃	15K		〃	
R_{728}	〃	〃		〃	
R_{729}	〃	1.5K		〃	
R_{730}	〃	〃		〃	
R_{731}	〃	33K		〃	
R_{733}	〃	47K		〃	
R_{734}	〃	33K		〃	
R_{735}	〃	100		〃	
R_{736}	〃	10K		〃	
R_{737}	〃	〃		〃	
R_{738}	〃	3.3K		〃	
R_{739}	〃	680		〃	
R_{740}	〃	4.7K		〃	
R_{741}	〃	15K		〃	
R_{742}	〃	〃		〃	
R_{743}	〃	2.2K		〃	

DIODES AND TRANSISTORS

Symbol	Description	Part No.
D_{701}	0A79 diode	
D_{702}	〃	
D_{703}	〃	
D_{704}	〃	
D_{705}	〃	
D_{706}	1N60 diode	
Q_{701}	2SC870 Transistor	
Q_{702}	〃	
Q_{703}	〃	
Q_{704}	〃	
Q_{705}	〃	
Q_{706}	〃	
Q_{707}	〃	
Q_{708}	〃	
Q_{709}	〃	

TRANSFORMERS

Symbol	Description	Part No.
T_{701}	19kHz Transformer	T75-008-0
T_{702}	38kHz Transformer	T75-009-A
T_{703}	19kHz Transformer	T75-011-A
T_{704}	S.C.A Filter Coil	T75-007-0
T_{705}	19kHz Filter Coil	T75-010-A

POTENTIOMETERS

Symbol	Descption	Part No.
VR_{701}	1kΩ Left and Right Level Adiust	C92-022-0
VR_{702}	300Ω Auto Level Adjust	C92-026-0

AM TUNER UNIT (W14-004-C)

CAPACITORS

Symbol	Description				Part No.
C_{501}	Ceramic	0.04	+80% −20%	25V	
C_{502}	〃	〃	〃	〃	
C_{503}	〃	〃	〃	〃	
C_{504}	〃	〃	〃	〃	
C_{506}	〃	0.01	〃	〃	
C_{507}	Styrol	410P		50V	
C_{508}		0.04	+80% −20%	25V	
C_{509}	〃	〃	〃	〃	
C_{510}	Electrolytic	10μ		15V	
C_{511}	Ceramic	5P		50V	
C_{512}	〃	0.04	+80% −20%	25V	
C_{513}	〃	〃	〃	〃	
C_{514}	Electrolytic	10μ		15V	
C_{515}	Ceramic	0.04	+80% −20%	25V	
C_{516}	〃	〃	〃	〃	
C_{517}	〃	2P		50V	
C_{518}	〃	0.04	+80% −20%	25V	
C_{519}	〃	30P		50V	
C_{521}	Electrolytic	200μ		15V	
C_{522}	Ceramic	0.01	+80% −20%	25V	
C_{523}	〃	0.005	〃	〃	

RESISTORS

Symbol	Description				Part No.
R_{501}	Carbon film	330K		1/8 W	
R_{502}	〃	2.2K		〃	
R_{503}	〃	47K		〃	
R_{504}	〃	1K		〃	
R_{505}	〃	2.2K		〃	
R_{506}	〃	3.3K		〃	
R_{507}	〃	27K		〃	
R_{508}	〃	1K		〃	
R_{509}	〃	2.2K		〃	
R_{510}	〃	470Ω		〃	
R_{511}	〃	220Ω		〃	
R_{513}	〃	47K		〃	
R_{514}	〃	220K		〃	
R_{515}	〃	2.2K		〃	
R_{516}	〃	2.7K		〃	
R_{517}	〃	2.2K		〃	
R_{518}	〃	12K		〃	
R_{519}	〃	8.2K		〃	
R_{520}	〃	〃		〃	
R_{521}	〃	47K		〃	
R_{522}	〃	1K		〃	
R_{524}	〃	100Ω		〃	
R_{525}	〃	2.2K		〃	
R_{526}	〃	470Ω		〃	
R_{527}	〃	22K		〃	

COILS AND TRANSFORMERS

Symbol	Description	Part No.
T_{501}	AM RF coil	T41-007-A
T_{502}	OSC coil	T43-004-0
T_{503}	IF Transformer	T71-014-A
T_{504}	〃	T71-018-0
T_{505}	〃	T72-012-A

DIODES AND TRANSISTORS

Symbol	Description	Part No.
D_{501}	1N60 Diode	
D_{502}	〃	
D_{503}	〃	
D_{504}	〃	
Q_{501}	2SC372 Transistor	
Q_{502}	〃	
Q_{503}	〃	
Q_{504}	〃	

PRE AMP. UNIT (W15-005-D)

CAPACITORS

Symbol	Description				Part No.
C_{101}	Electrolytic	10μ		10V	
C_{102}	〃	〃		〃	
C_{103}	Styrol	500P		50V	
C_{104}	〃	〃		〃	
C_{105}	Electrolytic	10μ		10V	
C_{106}	〃	〃		〃	
C_{107}	Styrol	100P		50V	
C_{108}	〃	〃		〃	
C_{109}	Electrolytic	100μ		25V	
C_{110}	〃	〃		〃	
C_{111}	〃	〃		3V	
C_{112}	〃	〃		〃	
C_{113}	〃	10μ		15V	
C_{114}	〃	〃		〃	
C_{115}	mylar	0.01		50V	
C_{116}	〃	〃		〃	
C_{117}	〃	0.003		〃	
C_{118}	〃	〃		〃	
C_{119}	〃	〃		〃	
C_{120}	〃	〃		〃	

RESISTORS

Symbol	Description				Part No.
R_{101}	Carbon film	270K			
R_{102}	〃	〃			
R_{103}	〃	390Ω			
R_{104}	〃	〃			
R_{105}	〃	100K			
R_{106}	〃	〃			
R_{107}	〃	330K			
R_{108}	〃	〃			
R_{109}	〃	33K			
R_{110}	〃	〃			
R_{111}	〃	330K			
R_{112}	〃	〃			
R_{113}	〃	27K			
R_{114}	〃	〃			
R_{115}	〃	1M			
R_{116}	〃	〃			
R_{117}	〃	15K			
R_{118}	〃	〃			
R_{119}	〃	〃			
R_{120}	〃	〃			
R_{121}	〃	2.2K			
R_{122}	〃	〃			
R_{123}	〃	10K			
R_{124}	〃	〃			
R_{125}	〃	220Ω			
R_{126}	〃	〃			
R_{127}	〃	1K			
R_{128}	〃	〃			

TRANSISTORS

Symbol	Description	Part No.
Q_{101}	2SC369 Transistor	
Q_{102}	〃	
Q_{103}	〃	
Q_{104}	〃	

CONTROL AMP. UNIT (W15-031-B)
CAPACITORS

Symbol	Description				Part No.
C_{601}	Electrolytic	10μ		10V	
C_{602}	〃	〃		〃	
C_{603}	〃	50μ		3V	
C_{604}	〃	〃		〃	
C_{605}	〃	100μ		15V	
C_{606}	〃	〃		〃	
C_{607}	〃	10μ		10V	
C_{608}	〃	〃		〃	
C_{609}	Mylar	0.003		50V	
C_{610}	〃	〃		〃	
C_{611}	〃	0.05		〃	
C_{612}	〃	〃		〃	
C_{613}	〃	〃		〃	
C_{614}	〃	〃		〃	
C_{617}	Electrolytic	10μ		10V	
C_{618}	〃	〃		〃	
C_{619}	〃	100μ		3V	
C_{620}	〃	〃		〃	
C_{621}	〃	1μ		10V	
C_{622}	〃	〃		〃	
C_{623}	〃	100μ		25V	
C_{624}	〃	〃		〃	
C_{625}	Mylar	0.05		50V	
C_{626}	〃	〃		〃	

RESISTORS

Symbol	Description				Part No.
R_{601}	Carbon film	47K		1/8W	
R_{602}	〃	〃		〃	
R_{603}	〃	150K		〃	
R_{604}	〃	〃		〃	
R_{605}	〃	33K		〃	
R_{606}	〃	〃		〃	
R_{607}	〃	1.2K		〃	
R_{608}	〃	〃		〃	
R_{609}	〃	3.9K		〃	
R_{610}	〃	〃		〃	
R_{611}	〃	1K		〃	
R_{612}	〃	〃		〃	
R_{613}	〃	8.2K		〃	
R_{614}	〃	〃		〃	
R_{615}	〃	10K		〃	
R_{616}	〃	〃		〃	
R_{617}	〃	〃		〃	
R_{618}	〃	〃		〃	
R_{619}	〃	4.7K		〃	
R_{620}	〃	〃		〃	
R_{621}	〃	330K		〃	
R_{622}	〃	〃		〃	
R_{623}	〃	150K		〃	
R_{624}	〃	〃		〃	
R_{625}	〃	2.2K		〃	
R_{626}	〃	〃		〃	
R_{627}	〃	10K		〃	
R_{628}	〃	〃		〃	
R_{629}	〃	15K		〃	
R_{630}	〃	〃		〃	
R_{631}	〃	1K		〃	
R_{632}	〃	〃		〃	
R_{633}	Carbon film	1K		1/8W	
R_{634}	〃	〃		〃	
R_{635}	〃	47K		〃	
R_{636}	〃	〃		〃	

TRANSISTORS

Symbol	Description	Part No.
Q_{601}	2SC369 Transistor	
Q_{602}	〃	
Q_{603}	〃	
Q_{604}	〃	

MAIN AMP. UNIT (W15-027-A)
CAPACITORS

Symbol	Description				Part No.
C_{801}	Electrolytic	10μ		15V	
C_{802}	〃	〃		〃	
C_{803}	〃	〃		〃	
C_{804}	〃	〃		〃	
C_{805}	Mylar	0.05		50V	
C_{806}	〃	〃		〃	
C_{807}	Electrolytic (non Poler)	5μ		25V	
C_{808}	〃	〃		〃	
C_{809}	Electrolytic	〃		〃	
C_{810}	〃	〃		〃	
C_{811}	mylar	0.05		50V	
C_{812}	〃	〃		〃	
C_{813}	Electrolytic	100μ		〃	
C_{814}	〃	〃		〃	
C_{815}	Ceramic	100P		〃	
C_{816}	〃	〃		〃	
C_{817}	Electrolytic	50μ		3 V	
C_{818}	〃	〃		〃	

DIODES AND TRANSISTORS

Symbol	Description	Part No.
D801 ~ D804	IN60 Diode	
D805	OA79 Diode	
D806	〃	
Q_{801}	2SC281 Transistor	
Q_{802}	〃	
Q_{803}	2SC627 Transistor	
Q_{804}	〃	
Q_{805}	2SC485 Transistor	
Q_{806}	〃	
Q_{807}	2SA537A Transistor	
Q_{808}	〃	
Q_{809}	2SC627 Transistor	
Q_{810}	〃	
Q_{811}	2SC538A Transistor	
Q_{812}	〃	

RESISTORS

Symbol	Description				Part No.
R_{803}	Carbon film	68K			
R_{804}	〃	〃			
R_{805}	〃	47K			
R_{806}	〃	〃			
R_{807}	〃	4.7K			
R_{808}	〃	〃			
R_{809}	〃	1K			
R_{810}	〃	〃			
R_{811}	〃	150Ω			
R_{812}	〃	〃			
R_{813}	〃	470K			
R_{814}	〃	〃			
R_{815}	〃	330K			
R_{816}	〃	〃			
R_{817}	〃	220Ω			
R_{818}	〃	〃			
R_{819}	〃	4.7K		½W	
R_{820}	〃	〃		〃	
R_{821}	〃	150K			
R_{822}	〃	〃			
R_{823}	〃	180K			
R_{824}	〃	〃			
R_{825}	〃	3.3K			
R_{826}	〃	〃			
R_{827}	〃	10K			
R_{828}	〃	〃			
R_{829}	Wire wound	10Ω		2W	
R_{830}	〃	〃		〃	
R_{831}	Carbon film	8.2K			
R_{832}	〃	〃			
R_{833}	〃	2.2K			
R_{834}	〃	〃			
R_{835}	〃	5.6K			
R_{836}	〃	〃			
R_{837}	〃	33K			
R_{838}	〃	〃			
R_{839}	〃	2.2K			
R_{840}	〃	〃			
R_{841}	〃	150Ω			
R_{842}	〃	〃			
R_{843}	〃	220Ω			
R_{844}	〃	〃			
R_{845}	〃	33Ω			
R_{846}	〃	〃			
R_{847}	〃	220Ω			
R_{848}	〃	〃			

POTENTIOMETERS

Symbol	Description	Part No.
VR_{801}	30KΩ semi fixed	C92-024-B
VR_{802}	〃	〃

P.T.F. UNIT (W15-010-A)

CAPACITORS

Symbol	Description				Part No.
C_{401}	Electrolytic	1μ		50V	
C_{402}	〃	〃		〃	
C_{403}	〃	〃		〃	
C_{404}	〃	〃		〃	
C_{405}	〃	2.2μ		〃	
C_{406}	〃	〃		〃	

RESISTORS

Symbol	Description				Part No.
R_{401}	Carbon film	47K			
R_{402}	〃	〃			
R_{403}	〃	〃			
R_{404}	〃	〃			
R_{405}	〃	27K			
R_{406}	〃	〃			

POWER SUPPLY UNIT (W16-010-0)

CAPACITORS

Symbol	Description				Part No.
C_{901}	Electrolytic	100μ		50V	
C_{902}	〃	10μ		〃	
C_{903}	〃	100μ		〃	
C_{904}	〃	200μ		25V	
C_{905}	〃	〃		〃	
C_{906}	〃	〃		15V	

RESISTORS

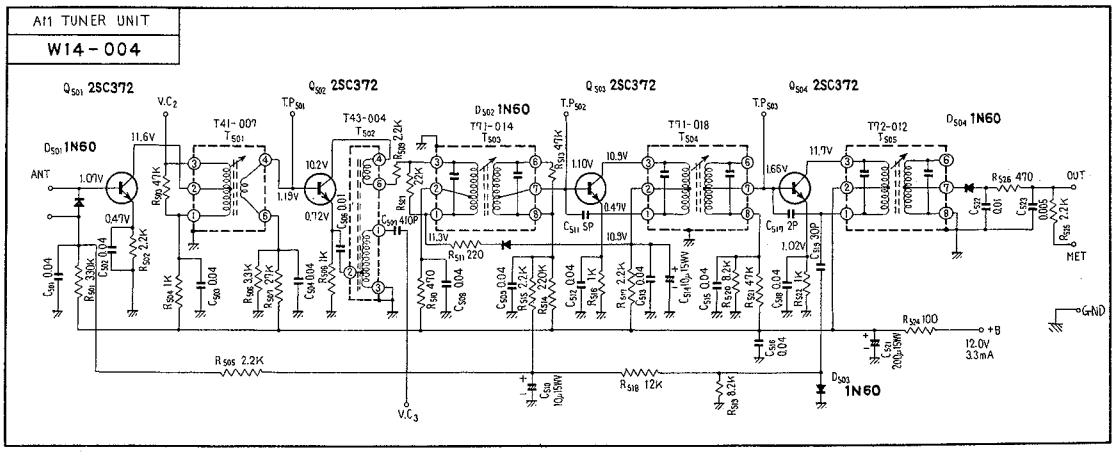
Symbol	Description				Part No.
R_{901}	wire wound	1K		2 W	
R_{902}	Carbon film	22K		½W	
R_{903}	〃	33K	5%	〃	
R_{904}	〃	18K	〃	〃	
R_{905}	〃	3.3K		〃	
R_{906}	〃	47Ω		〃	
R_{907}	〃	〃		〃	
R_{908}	〃	680Ω		〃	

DIODES AND TRANSISTORS

Symbol	Description	Part No.
D_{901}	SW-1-02 Diode	
D_{902}	〃	
D_{903}	〃	
D_{904}	〃	
D_{905}	SD-1 Diode	
D_{906}	〃	
D_{907}	SZ-200-13 OR 1S-338Q Zener Diode	
Q_{901}	2SC627 Transistor	
Q_{902}	2SC620 Transistor	
Q_{903}	2SC486 Transistor	

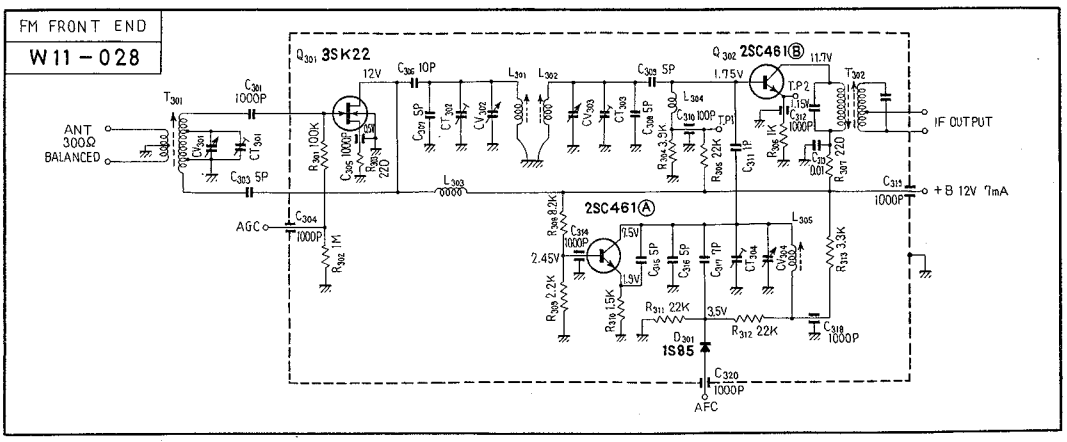
AM TUNER UNIT

AM TUNER UNIT
W14-004



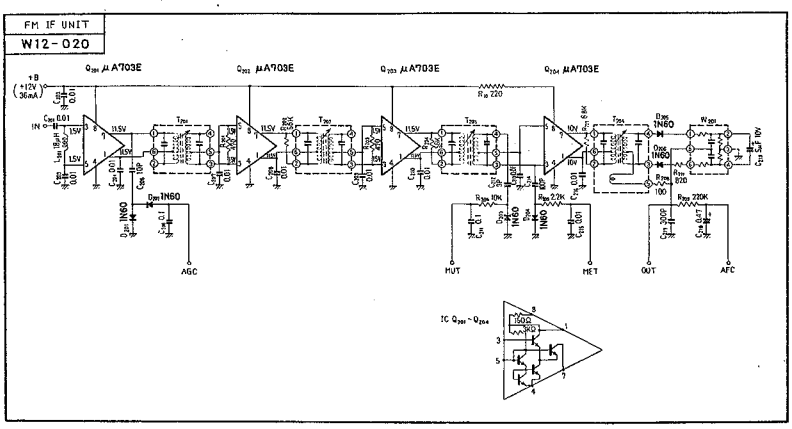
FM FRONT END

FM FRONT END
W11-028



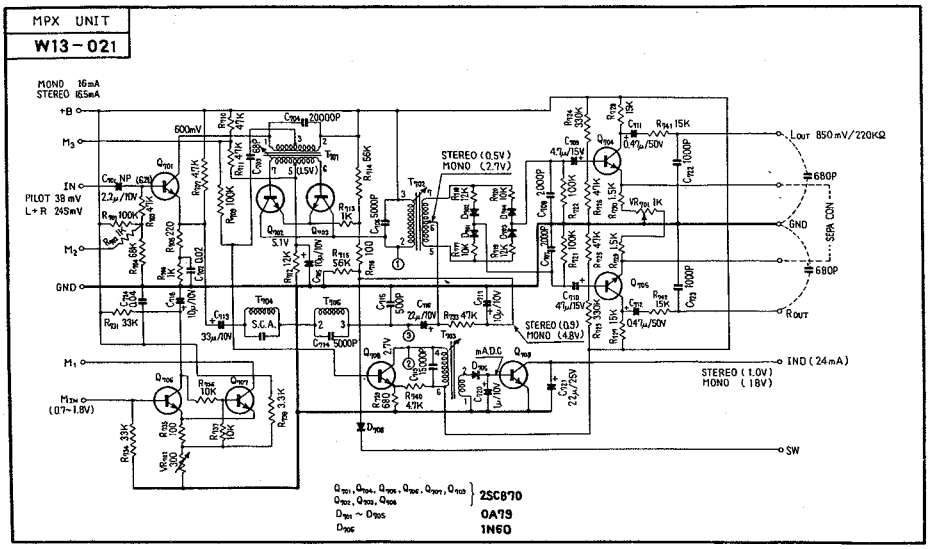
FM IF UNIT

FM IF UNIT
W12-020

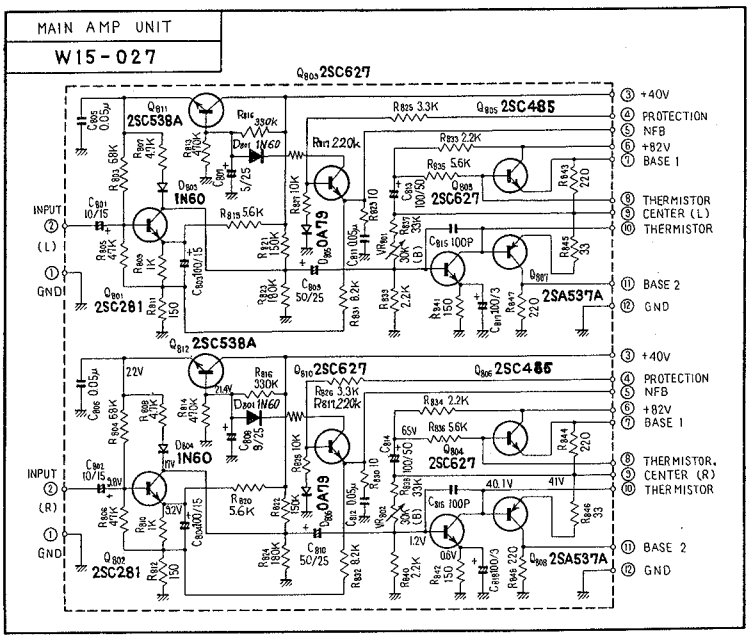


MPX UNIT

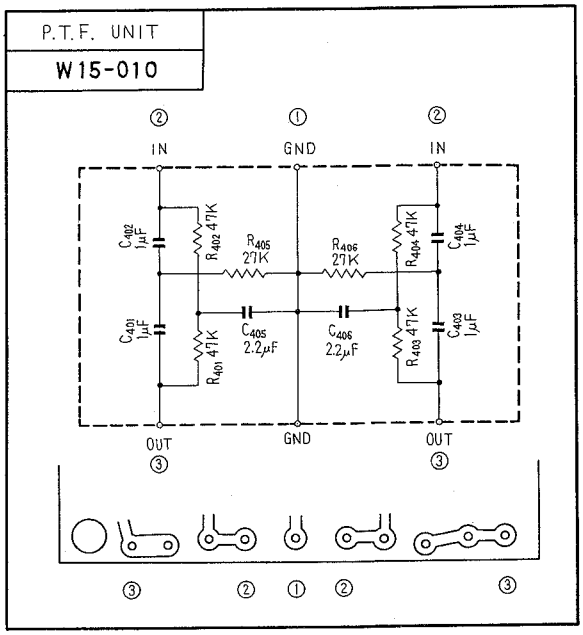
MPX UNIT
W13-021



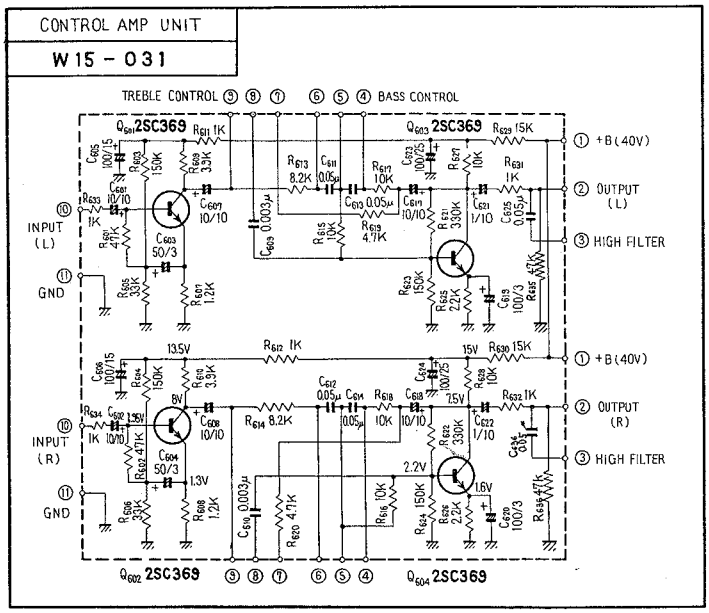
MAIN AMP UNIT



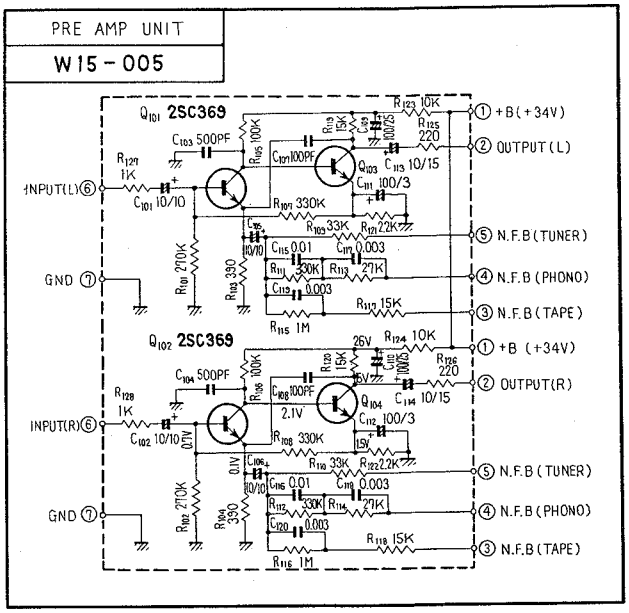
P.T.F UNIT



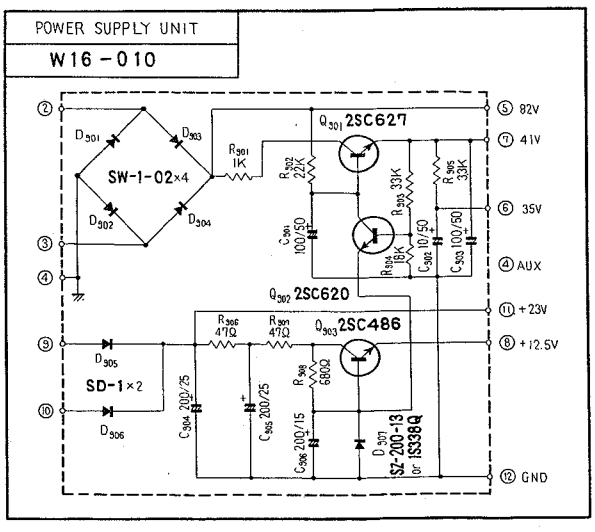
CONTROL AMP UNIT



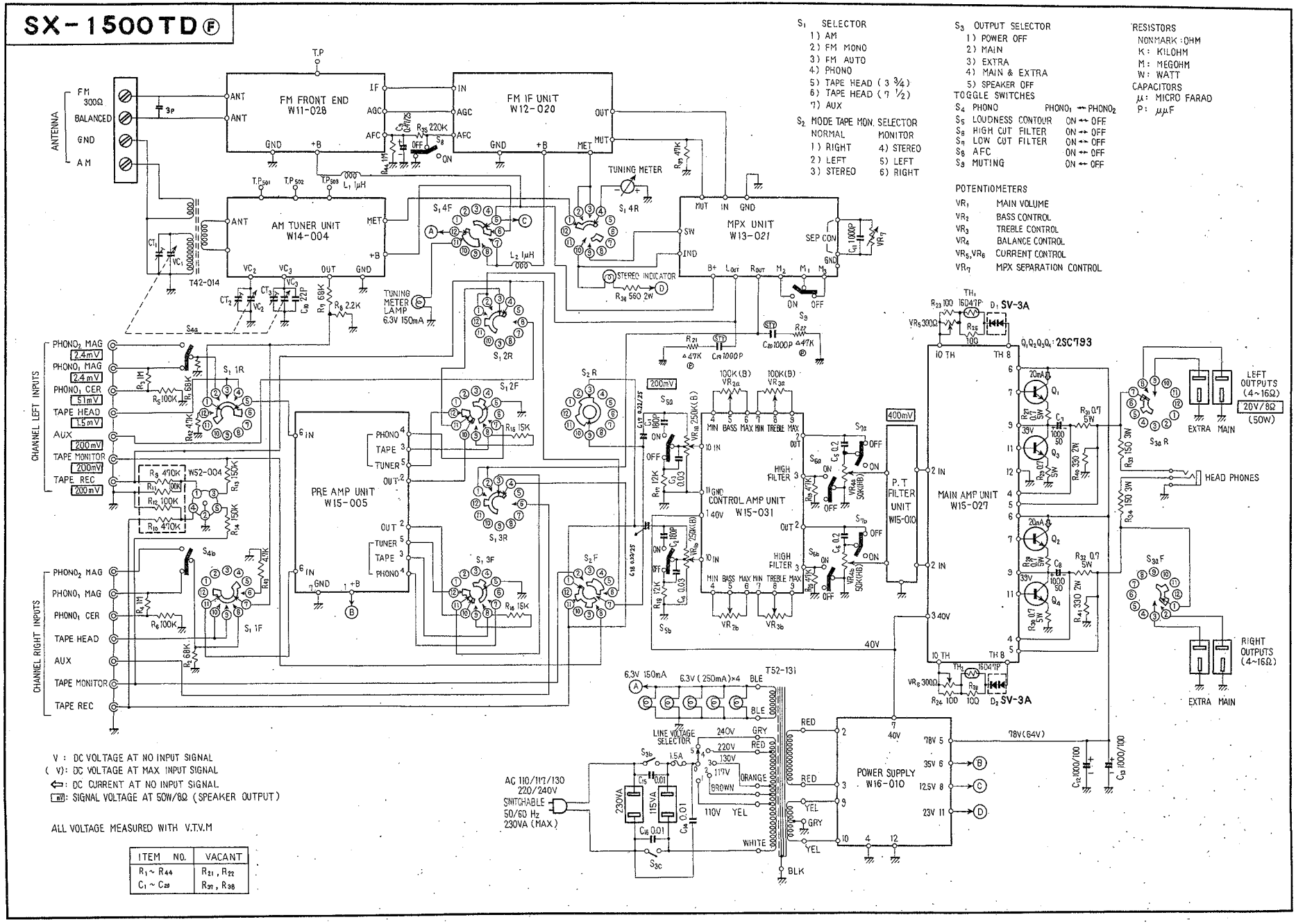
PRE AMP UNIT



POWER SUPPLY UNIT

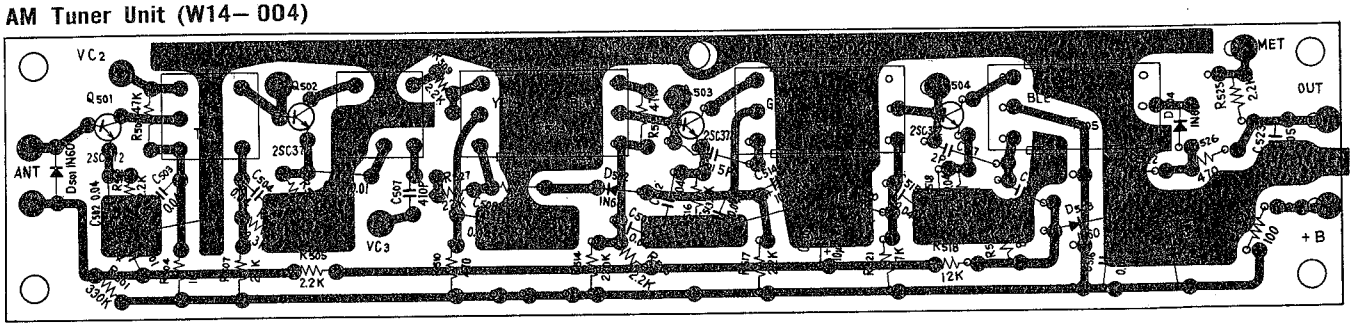


SX-1500TD (F)

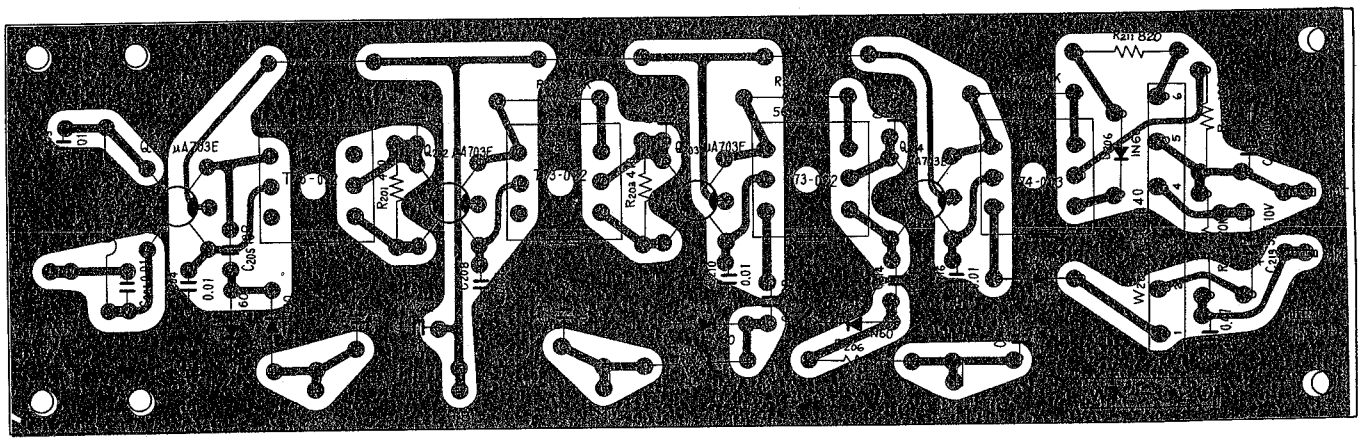


ITEM NO.	VACANT
R1 ~ R44	R21, R22
C1 ~ C28	R31, R38

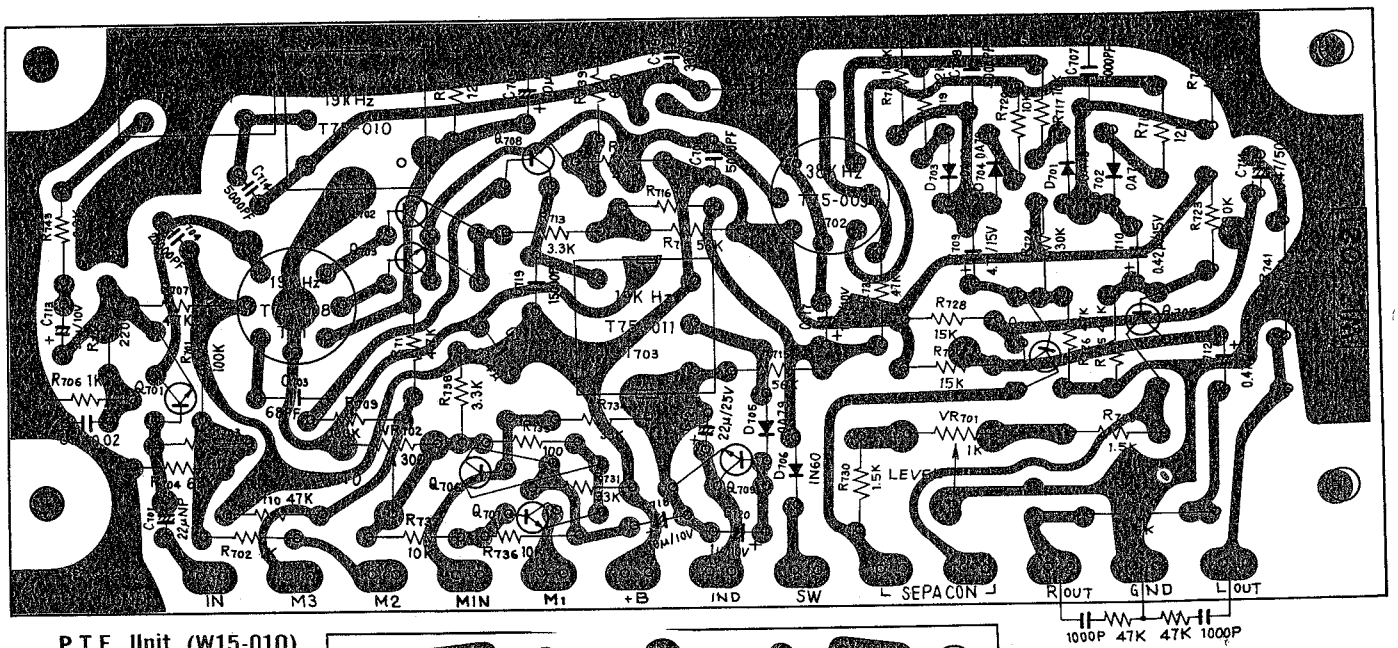
AM Tuner Unit (W14– 004)



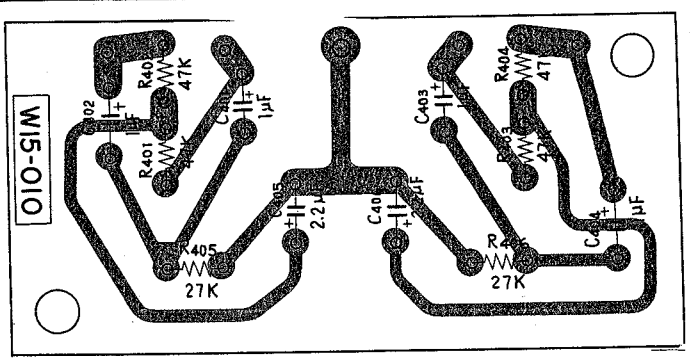
FM if Unit (W12-020)



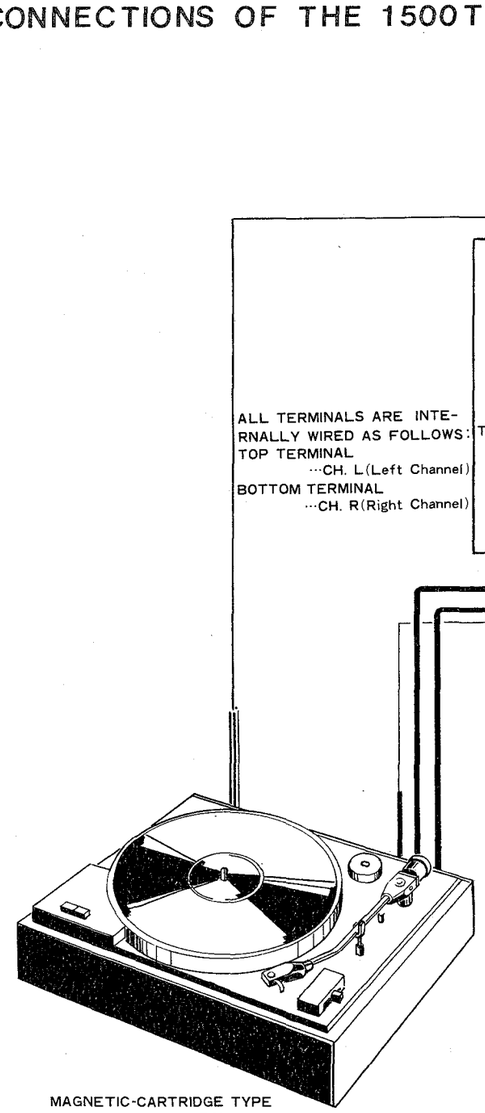
FM MPX Unit (W13-021)



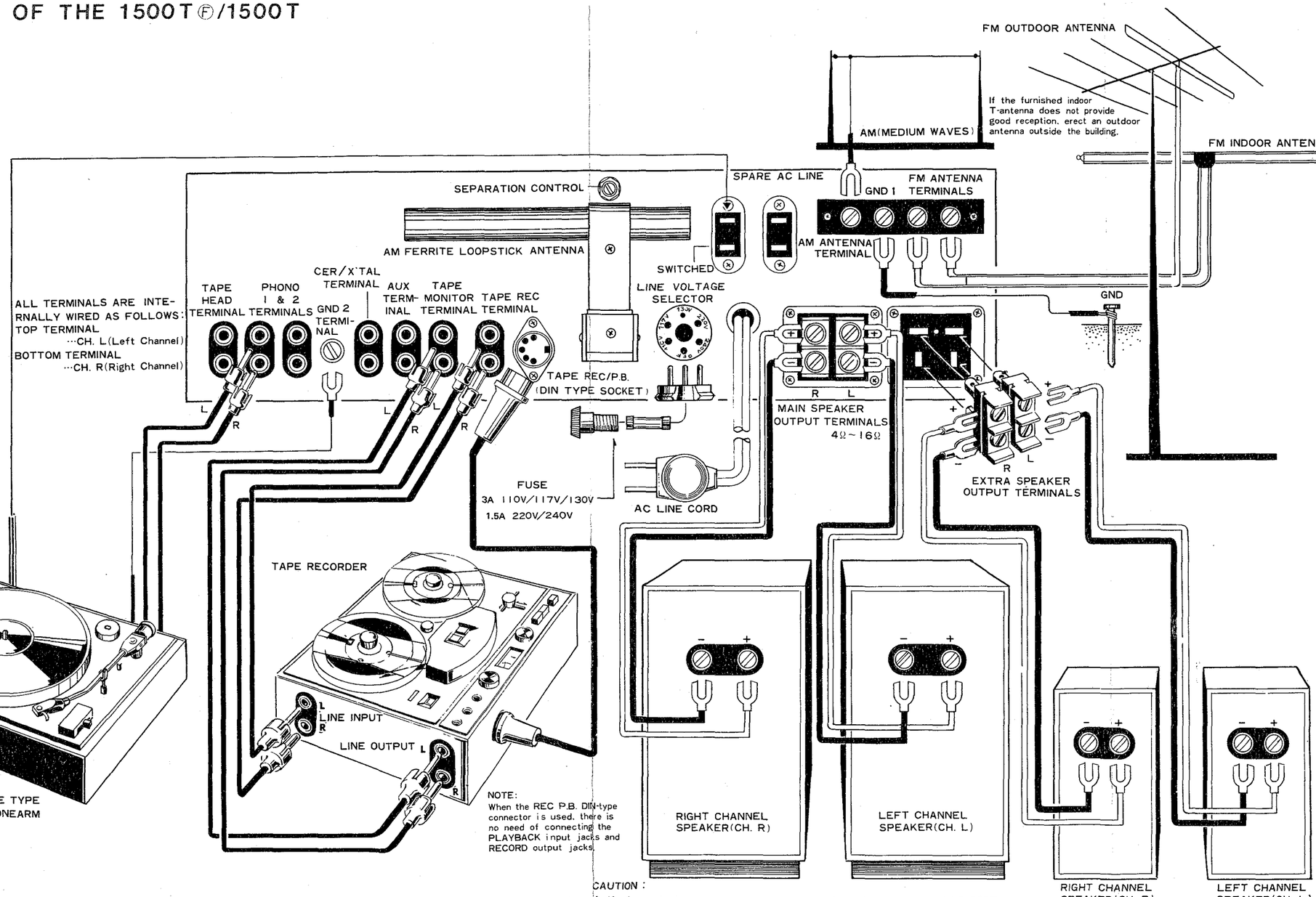
P,T,F, Unit (W15-010)



REAR CONNECTIONS OF THE 1500T Ⓕ/1500T



MAGNETIC-CARTRIDGE TYPE TONEARM



NOTE:
When the REC P.B. DIN-type connector is used, there is no need of connecting the PLAYBACK input jacks and RECORD output jacks.

CAUTION :

1. If only one loudspeaker system is connected to either of the two sets of LOUDSPEAKER output terminals, the loudspeaker impedance (each channel) may be 4 to 16 ohms. If, however, both output terminals (MAIN LOUDSPEAKER and EXTRA LOUDSPEAKER are used for connection with two loudspeaker system, the loudspeaker impedance (each channel) should be 8 to 16 ohms.
2. Never short the loudspeakers terminals.

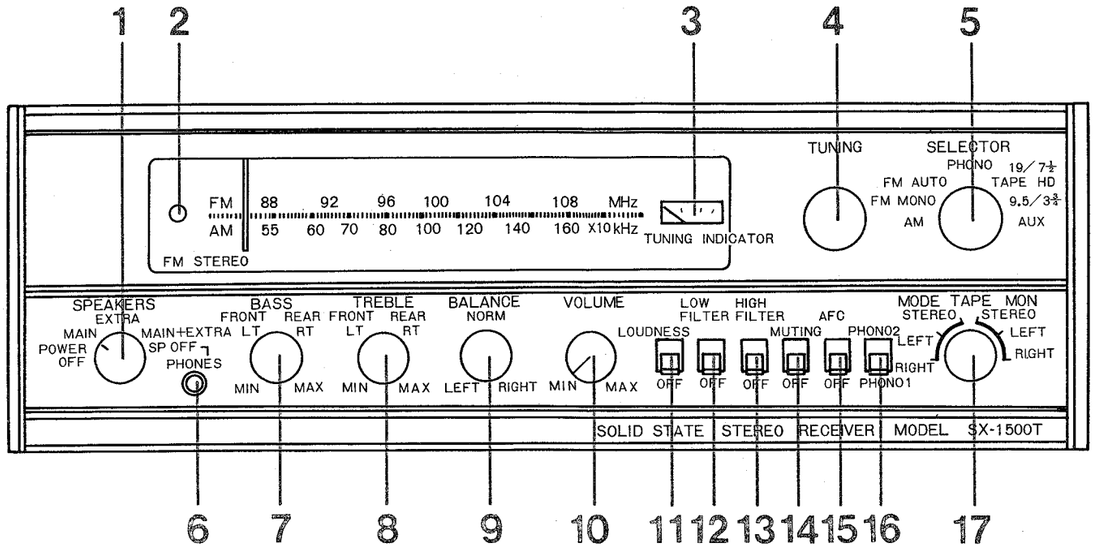
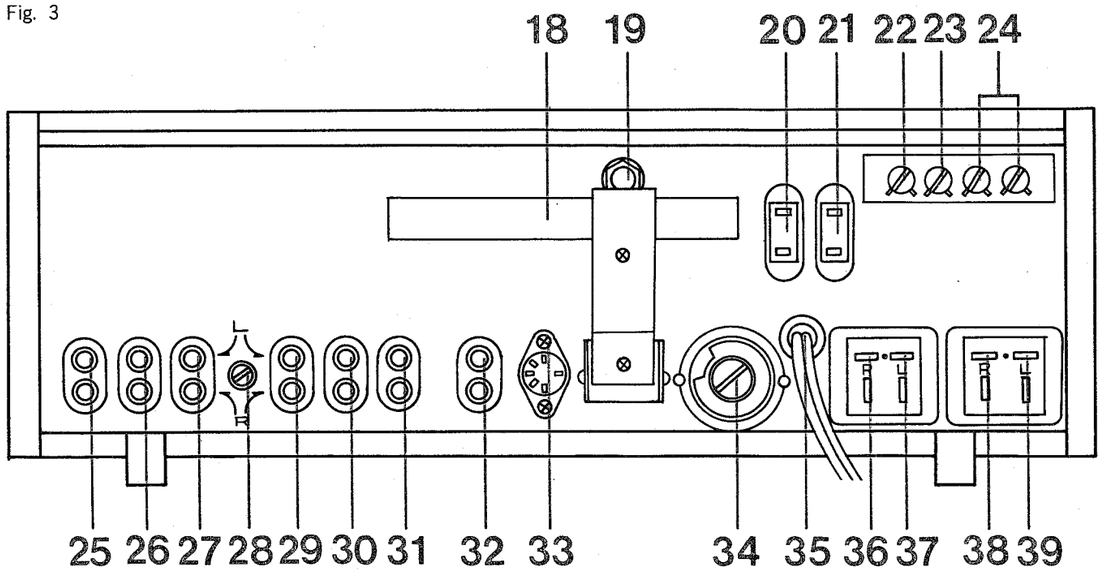


Fig. 2

Fig. 3



Functions of the front panel controls and indicators

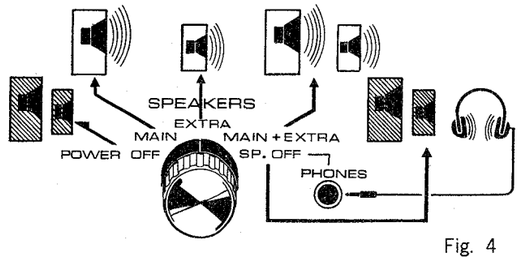


Fig. 4

1. LOUDSPEAKERS

This switch selects the loudspeaker system to be used and also sevres as the main power switch. Its positions are as follows:

POWER OFF.....For turning the unit power off.
MAIN .....For listening through main loudspeakers.
EXTRA .....For listening through extra loudspeakers.
MAIN-EXTRA ...For listening through both main and extra loudspeakers.
SP. OFF.....For muting all loudspeakers. (This function is convenient when the headphones are used.)

2. FM STEREO INDICATOR

This indicator light automatically switches on when the FM station is broadcasting stereo.

3. TUNING INDICATOR

This meter indicates the optimum tuning points for AM or FM stations. For tuning in a station, the TUNING control (4) is adjusted to produce maximum swing of this meter.

4. TUNING

This control tunes the receiver to the desired AM or FM station.

5. SELECTOR

This control switch selects the program material to be reproduced; the type of radio broadcast, phono, or tape playback.

AM .....For reception of AM (medium-wave broadcast band) station.
FM MONO.....For reception of FM monaural stations.
FM AUTO .....For reception of FM broadcasts, with automatic switching between FM monaural and stereo.
PHONO .....For playback of records.
19/7½".....This position provides proper equalization for tapes recorded at 19 centimeters (or 7½ inches) per second.
9.5/3¾" .....This position provides proper equalization for tapes recorded at 9.5 centimeters (or 3¾ inches) per second.
AUX .....For reproduction of signals fed to the AUX jacks (30).

6. PHONES

This jack is for stereo headphones.

7. BASS

This control adjusts bass response. Turning it to clockwise will boost, and turning it counterclockwise will reduce bass response. The center top indicates the intermediate point.

8. TREBLE

This control adjusts treble response. Turning it clockwise will boost, and turning it conuterclockwise will reduce treble response. The center top indicates the intermediate point.

Note: These controls (BASS and TREBLE) are of two-section type;
the front section adjusts the left channel and the rear section adjusts the right channel. Usaully, the tone response is adjusted for both channels simultaneously. To adjust the response for only one channel, the section corresponding to the channel may be adjusted while the other is held by hand

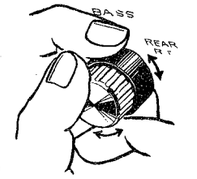


Fig. 5

9. BALANCE

This control serves to balance the volume level of the left and right channels.

10. VOLUME

This control adjusts the volume level. Turning it clockwise will increase the volume, and turning it counterclockwise will decrease the volume.

11. LOUDNESS CONTOUR

For listening at low volume settings, this switch is set to the LOUDNESS position to increase the sounds in the extreme bass and treble range for adding reality to the reproduction. For listening at high volume level, this switch is normally set to OFF.

12. LOW FILTER

Setting this switch to the LOW FILTER position will eliminate low frequency noise such as record rumble, hum, or other interference. When noise is not present, this switch is normally set to OFF.

13. HIGH FILTER

Setting this switch to the HIGH FILTER position will eliminate high frequency noise, such as record scratch, hiss, static noise from fluorescent lamps, or other interference. When no such noise is present, this switch is normally set to OFF.

14. MUTING SWITCH

When an FM station is tuned in, setting this switch to MUTING will eliminate interference noises between FM stations. For reception of a weak-signal station, the switch should be set to OFF.

15. AFC SWITCH

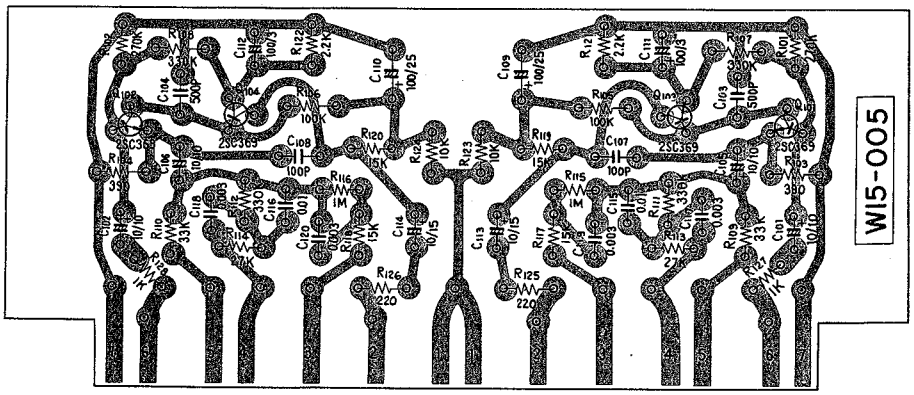
The function of the AFC (automatic frequency control) circuit is to compensate automatically for tuning drift which frequently occurs when listening in an FM station for a long time. This switch should be set to the OFF position when tuning in a station, and after the station has been tuned in, it should immediately be set to the AFC position.

16. PHONO SWITCH

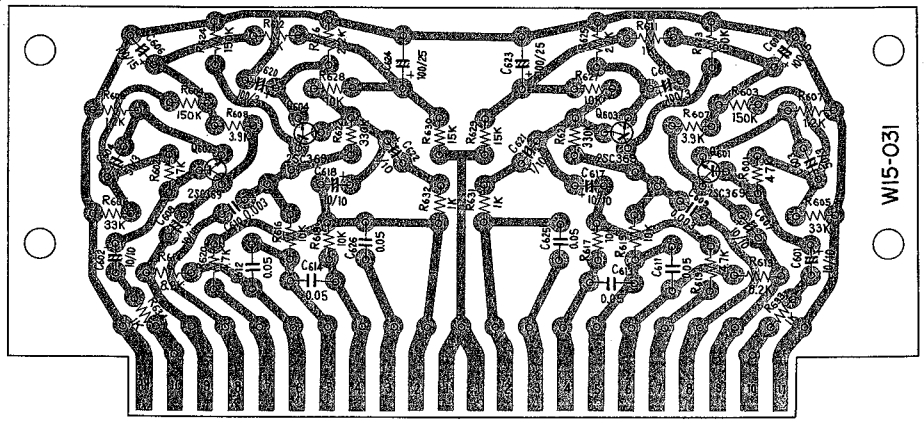
This control switch selects the record player to be used.

PHONO 1 .....For reprodution of the output of the record player connected to the PHONO 1 jacks (26).
PHONO 2 .....For reproduction of the output of the record player connected to the PHONO 2 jacks (27).

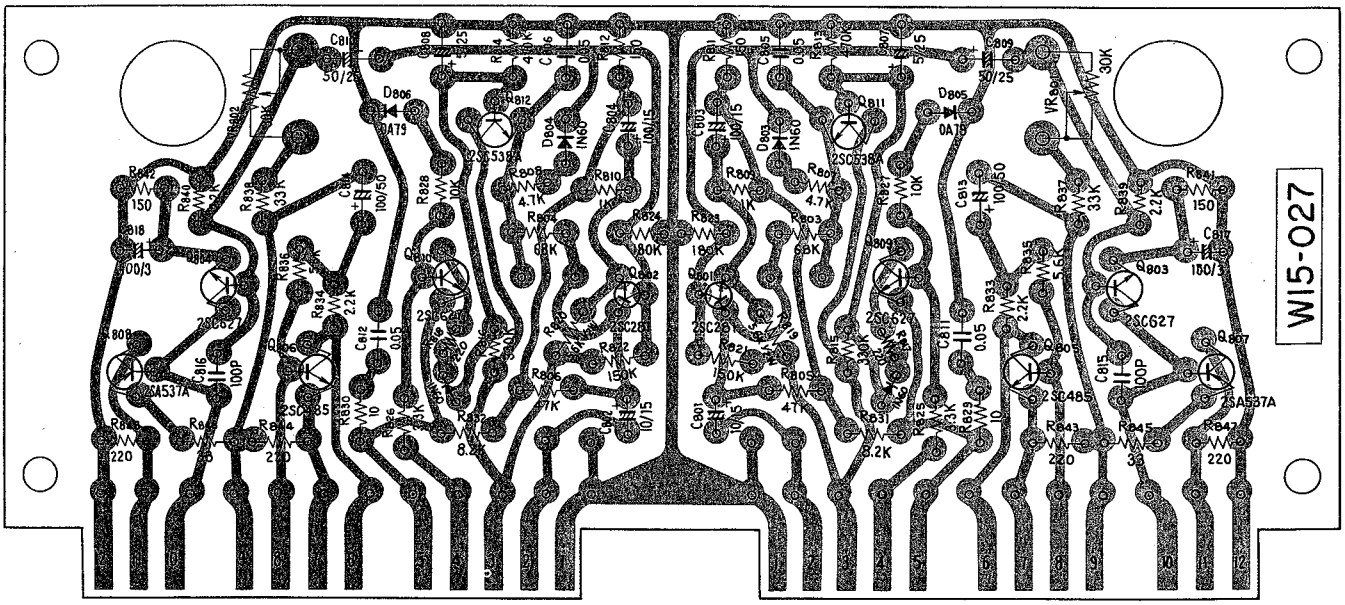
Pre. Amp. Unit (W15-005)



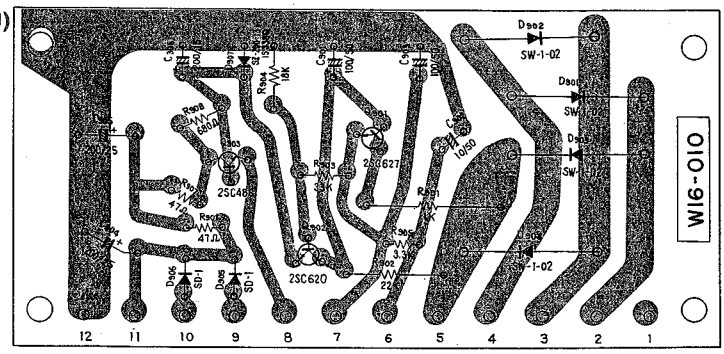
Contol Amp. Unit (W15-031)



Main Amp. Unit (W15-027)



POWER Supply Unit (W16-010)



PIONEER

MODEL SX-1500T(F) TECHNICAL SPECIFICATIONS

●Transistors and Diodes

Tuner Section
- IC.....4
- FET.....1
- Transistors.....13
- Diodes.....16

Audio Section
- Transistors.....27
- Diodes and etc. 13

●FM Section

Circuitry	Front-end using "FET" and 4 gang variable air capacitor IF amplifier using "IC"
Frequency Range	87～108MHz
IHF Usable Sensitivity	1.7μV
Image Rejection	76dB (at 98MHz)
Signal to Noise Ratio	65dB (IHF Rating)
Capture Ratio	1dB (at 98MHz)
Antenna Input	300 ohms (balanced)

●Multiplex Section

Circuitry	Time-switching type de-modulator FM Mono Stereo Automatic selection
Channel Separation	37dB (at 1kHz)

●AM Section

Circuitry	Superheterodyne
Frequency Range	525～1605kHz
IHF Usable Sensitivity	20μV
Image Rejection	60dB (at 1000kHz)
Antenna Input	Built-in Ferrite Loopstick antenna

●Audio Section

Circuitry	Single ended push-pull
Music Power Output	4Ω170 / 8Ω140 } watts total (IHF rating)
RMS Rated Power Output	4Ω60 / 8Ω55 } watts per channel
Frequency Response	±1dB, from 20Hz to 70kHz (Over-all)
Harmonic Distortion	Less than0.5% (at 1kHz rated output)
Power Bandwidth	15Hz to 70kHz (AUX)
Hum & Noise (at rated output)	TAPE HEAD: better than 75dB MAG: better than **80dB** AUX: better than 90dB
Inputs Impedance and Audio Sensitivity (for rated output)	MAGnetic PHONO: 2.4 mv. 50kΩ(1kHz) CERamic PHONO : 51 mv. 90kΩ(1kHz) TAPE HEAD : 1.5 mv. 120kΩ(1kHz) TAPE MONITOR : 200 mv. 100kΩ(1kHz) AUXiliary : 200 mv. 100kΩ(1kHz)
Damping Factor	25 (8Ω, 1kHz)
Output Terminals and Jacks	Speakers: 4～16 ohms Stereo headphones jack Simultaneous tape Recording jacks, equipped with TAPE MONITOR switch Tape recording/playback jack (DIN standards)
Equalization Curves	PHONO: RIAA TAPE : NAB
Tone Controls (each channel)	BASS: boost 12dB, cut 14dB (at 50Hz) TREBLE: boost 10dB, cut 11.5dB (at 10kHz)
Filters	LOW: cut 6.0dB (at 50Hz) HIGH: cut 10.0dB (at 10kHz)
Loudness Contour	Switchable to ON-OFF boost 12dB at 50Hz, boost 6.5dB at 10kHz, with VOLUME control set at −40dB

Power Supply, Etc.
Line Requirements

Model SX-1500T(F)	110V, 117V, 130V, 220V, and 240V. (Switchable) 50-60Hz 220 watts (Max)
Model SX-1500T	117V 50-60Hz 220 watts (Max)
Dimensions	Overall 16 7/16"/418m/m (Width) 5 1/2"/140m/m (Height) 13 3/4"/347m/m (Depth)
Weight	Net Net 25lbs. /11.3kg Net 30lbs. /14kg

These specification are subject modification for improvement with out notice

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Printed in Japan <R12-006-B> <68J03E03T